

THE ACADEMY.

A Record of Literature, Learning, Science, and Art.

"INTER SILVAS ACADEMI QUÆRERE VERUM."

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General Literature.

Middlemarch. A Study of Provincial Life. By George Eliot.
Blackwood.

CONTEMPORARY criticism of great works is apt to prove unsatisfactory, for even when their greatness is recognised at once, the critic labours under a double disadvantage: an unwonted sense of responsibility restrains the free expression of unmotivated admiration, and the easy volubility of praise, which is enough for slighter merits, makes way for a guarded tone of respect that looks like coldness on the surface. Nor is this all; for the vocabulary of positive eulogium is soon exhausted; criticism to be significant must be comparative, and there is an obvious difficulty in estimating by old-established standards of excellence a new work that may contain within itself a fresh standard for the guidance and imitation of futurity. For the theory of art is after all only a patchwork of inference from the practice of artists, and, to quit generalities, in one clearly defined and admirable branch of imaginative art—the English novel—our ideal is simply one or other of the masterpieces of one or other of the great novelists between Fielding and George Eliot. *Tom Jones*, *Clarissa Harlowe*, *Waverley*, *Pride and Prejudice*, *Vanity Fair*, *Adam Bede*—to which some might wish to add *Eugene Aram*, *Pickwick*, and *Jane Eyre*—are the sources from whence all theories of the novel, as a prose narrative representation of manners, character and passion, ultimately derive. In truth, variety and intensity, the best of these works left something to be supplied by excellence of a different type: there are stronger as well as more complex passions than Fielding has drawn; Richardson's subtlety works in a narrow field; Miss Austen's knowledge of the world was scanty, and Thackeray's theory of human nature one-sided, while on the other hand it might be argued that an over-systematic plot or too thrilling situations give a *prima facie* look of unreality to scenes of modern life. No one of course makes it a ground of complaint against these authors that they failed to combine incompatible perfections, but a reference to the natural limitations of the styles in which they severally succeeded may help to show what space was left for a fresh combination of the old ingredients.

Middlemarch marks an epoch in the history of fiction in
VOL. IV.

so far as its incidents are taken from the inner life, as the action is developed by the direct influence of mind on mind and character on character, as the material circumstances of the outer world are made subordinate and accessory to the artistic presentation of a definite passage of mental experience, but chiefly as giving a background of perfect realistic truth to a profoundly imaginative psychological study. The effect is as new as if we could suppose a *Wilhelm Meister* written by Balzac. In *Silas Marner*, *Romola*, and the author's other works there is the same power, but it does not so completely and exclusively determine the form in which the conception is placed before us. In *Silas Marner* there is a natural and obvious unity in the life of the weaver, but in *Romola*—where alone the interest is at once as varied and as profound as in *Middlemarch*—though the historic glories of Florence, the passions belonging to what, as compared with the nineteenth century, is an heroic age, are in perfect harmony with the grand manner of treating spiritual problems, yet the realism, the positive background of fact, which we can scarcely better bear to miss, has necessarily some of the character of an hypothesis, and does not inspire us with the same confidence as truths we can verify for ourselves. For that reason alone, on the mere point of artistic harmony of construction, we should rate the last work as the greatest; and to say that *Middlemarch* is George Eliot's greatest work is to say that it has scarcely a superior and very few equals in the whole wide range of English fiction.

As "a study of provincial life," if it were nothing more, *Middlemarch* would have a lasting charm for students of human nature in its less ephemeral costumes; besides the crowds of men and women whom we have all known in real life, where, however, to our dimmer vision, they seemed less real and life-like than in the book, the relations between the different clusters, the proportions in which the different elements mix, the points of contact and the degree of isolation in the different ranks; the contented coexistence of town and county, the channels of communication between the two always open and yet so rarely used, the effect of class distinctions in varying the mental horizon and obliging the most matter-of-fact observer to see a few things in perspective,—all the subtle factors which make up the character of a definite state of society are given with inimitable accuracy and fulness of insight. The picture in its main outlines is as true of the England of to-day or the England

of a hundred years ago as of the England of the Reform agitation. The world as we know it has its wise and good, its fools and hypocrites scattered up and down a neutral-tinted mass in much the same proportion as at Middlemarch. The only difference is that they are not so plainly recognisable, and this is perhaps the reason that a first perusal of the book seems to have an almost oppressive effect on ordinary readers, somewhat as little children are frightened at a live automaton toy. It is not natural to most men to know so much of their fellow-creatures as George Eliot shows them, to penetrate behind the scenes in so many homes, to understand the motives of ambiguous conduct, to watch "like gods knowing good and evil" the tangled course of intermingled lives, the remote mainsprings of impulse and the wide-eddy effects of action. Even with the author's assistance it is not easy to maintain the same height of observant wisdom for long, and since the intricacy of the subject is real, a feeling of even painful bewilderment in its contemplation is not entirely unbecoming.

But the complicated conditions of so seemingly simple a thing as provincial life are not the main subject of the work. The busy idleness of Middlemarch, its trade, its politics, its vestry meetings, and its neighbouring magnates, only form the background of relief to two or three spiritual conflicts, the scenery amongst which two or three souls spend some eventful years in working out their own salvation and their neighbours', or in effecting, with equal labour, something less than salvation for both. The story of these conflicts and struggles is the thread which unites the whole, and sympathy with its incidents is the force that reconciles the reader to the unwonted strain upon his intellectual faculties already noticed; and to the yet further effort necessary to recognise the fact that the real and the ideal sides of our common nature do coexist in just such relations, and with just such proportionate force as the author reveals. For, without this admission, it is impossible to appreciate the full literary and artistic perfection of the work as a whole; some readers may delight spontaneously in the author's moral earnestness, and only admire her satirical insight, while others delight in her satire and coldly admit the excellence of the moral purpose; but the two are only opposite aspects of the same large theory of the universe, which is at once so charitable and so melancholy that it would be fairly intolerable (although true) without the sauce of an unsparing humour.

Middlemarch is the story of two rather sad fatalities, of two lives which, starting with more than ordinary promise, had to rest content with very ordinary achievement, and could not derive unmixed consolation from the knowledge, which was the chief prize of their struggles, that failure is never altogether undeserved. One of the original mottoes to the first book gives the clue to what follows:

"1st Gent. Our deeds are fetters that we forge ourselves.

2nd Gent. Ay, truly; but I think it is the world
That brings the iron."

but as the action proceeds a further consciousness gathers shape: "It always remains true that if we had been greater, circumstances would have been less strong against us;" which is still more simply expressed in Dorothea's "feeling that there was always something better which she might have done, if she had only been better and known better." The two failures, however, have little in common but their irrevocable necessity. From one point of view, Dorothea's is the most tragical, for the fault in her case seems to be altogether in the nature and constitution of the universe; her devotion and purity of intention are altogether beautiful, even when, for lack of knowledge, they are expended in what seems to be the wrong place, but it is a sad reflection that

their beauty must always rest on a basis of illusion because there is no right place for their bestowal. Except in the chapter of her marriages Dorothea is a perfect woman, but for a perfect woman any marriage is a *mésalliance*, and as such, "certainly those determining acts of her life were not ideally beautiful." But we can as little tell as the Middlemarchers "what else that was in her power she ought rather to have done." If she had had no illusions she might have been a useful Lady Bountiful, managing her own affairs like Goethe's Theresa, a personage who inspires but mediocre interest, and might have married Mrs. Cadwallader's philanthropic Lord Triton without suspicion of *mésalliance*: but then she would not have been Dorothea, not the impetuous young woman with "a heart large enough for the Virgin Mary," whose sighs, when she thinks her lover is untrue, are breathed for "all the troubles of all the people on the face of the earth." The world must be ugly for her power of seeing it as it is not to be beautiful, just as men's lives must be sad and miserable to call for the exercise of her infinite charity. Still the illusions are sweet and the charity beneficent, and since women like Dorothea are content to live only for others, life may offer occasions enough for self-sacrifice to compensate them for the natural impossibility of shaping an ideally perfect course through the multitudinous imperfections of real existence. It would be ungenerous to accept such a fate for them without reluctance, and therefore some sadness must always mix with our thoughts of the historic and unhistoric Dorotheas of the world; but it is also true that the moral force exercised by such characters can no more be wasted than any physical impulse, and that, without the disinterested virtue of the few, the conflicting appetites of a world of Rosamonds would make life impossible. To keep society alive is perhaps a worthier mission than to cheer the declining years of Mr. Casaubon; but to do more than keep it alive, to make it a fit home for future Dorotheas, the present supply of such missionaries would have to be increased; and they are born, not made. Perhaps the strongest example of the author's instinctive truthfulness is that she never loses sight of the limits to the exercise of the power which she represents so vividly and values so highly. A life's growth of empty egotism like Mr. Casaubon's cannot be melted in a year of marriage, even to Dorothea; with a generous example close before her, Rosamond can be almost honest for once at little expense, but she can no more change her character than her complexion or the colour of her eyes, or than she can unmake the whole series of circumstances which have made her life less negatively innocent than Celia's. A little more selfishness, a little more obstinacy, a little less good fortune, and especially life in a just lower moral atmosphere, make all the difference between a pretty, prosaic, kittenish wife and a kind of well-conducted domestic vampire. It is by such contrasts as these that George Eliot contrives to preach tolerance even while showing with grim distinctness the ineffaceableness of moral distinctions and the unrelenting force of moral obligations. If virtue is a matter of capacity, defect only calls for pity; but defects which we do not venture to blame may be none the less fatal to the higher life, while the smallest shoot of virtue, if the heavens and earth chance to be propitious to its growth, may spread into a stately tree.

Such at least is the inference suggested by another contrast, that between Lydgate and Fred, for though marriage appears the "determining act" in their lives also, it is itself determined by certain essential points of character and disposition. Fred's honest boyish affection for a girl who is a great deal too good for him brings its own reward, as that kind of virtue often will; there was enough self-abandonment

in it to deserve a generous answer, and in the long-run people generally get their deserts. The failure of Lydgate's intellectual aspirations, as the consequence of a marriage contracted altogether at the bidding of his lower nature, is of course much more elaborately treated than Fred's simple "love-problem." Unlike most of the other characters, Lydgate does not become thoroughly intelligible till the last number of the work has been read in connection with the first: then he appears as a masculine counterpart to Dorothea with the relative proportions of head and heart reversed. But while it was abstractedly impossible for Dorothea to be altogether wise, without detriment to the peculiar and charming character of her goodness, there was nothing but concrete human infirmity to prevent Lydgate from combining the mind of Bichat and the morals of Fred Vincy. Instead of such a compound the actual and very human Lydgate is one of those men whose lives are cut in two, whose intellectual interests have no direct connection with their material selves, and who only discover the impossibility of living according to habit or tradition when brought by accident or their own heedlessness face to face with difficulties that require thought as well as resolution. There was not room in the life he contemplated for a soul much larger than Rosamond's, and it may be doubted whether the Rosamond he wished for would not, by a merely passive influence, have been as obstructive to his wide speculations, for he was just, though not expansive, and the duties entailed by one act of weakness may multiply and branch as much as if they were of a valuable stock. On the other hand, if the scientific ardour had been more absorbing, he might have gone on his own way, crushing all poor Rosamond's little schemes of opposition, and then she would have been the victim instead of the oppressor, but his character would have been as far from ideal excellence as before. The interest culminates when Lydgate, entangled with the consequences of his own and other people's wrongdoing, finds in Dorothea the beneficent influence that spends itself in setting straight whatever is not constitutionally crooked, but he has also of course found out by then that the events which led him to cross her path were the same that had proved fatal to his aspirations; the enlarged sympathies were gathered during the process that paralysed his original activity. The story of a man "who has not done what he once meant to do" has always a strong element of pathos, but when what he meant to do was not in itself impossible, like the realization of Dorothea's visions, there remains a twofold consolation; if possible in itself, and yet not done as proposed, it must have been impossible to the proposer, and therefore his failure is free from blame, while disappointment of his hopes, though painful, cannot be regarded as an unmitigated evil, since such fallen aspirations as Lydgate's are still something it is better to have had than to be altogether without. Natural fatality and the logic of facts are made to persuade us that all regrets are impractical except the most impractical of all—"if we had only known better and been better"—but the first step towards solving a problem is to state it; and one of the many merits of *Middlemarch* is that it shows the inadequacy of all other less arduous short cuts to the reformation of society. Ordinary mortals who are not fatalists have no excuse for calling a book sad which makes the redress of every one's wrongs rest in the last resort with themselves; while people whose idea of the world is already as gloomy as it well can be, cannot fail to derive some consolation from the thought that George Eliot's wider knowledge and juster perceptions find here and there a little to admire as well as much everywhere to laugh at.

There is no occasion to dwell in detail on the story which every one has read. The studies of Casaubon and Bulstrode

would each furnish matter for an ordinary review, though here we have treated them as altogether secondary to the development of the two principal characters. Besides their more direct influence on the action, both serve, with old Featherstone, to illustrate the blindness of selfish calculation. Bulstrode is none the better either for his manslaughter or for his attempt at restitution. If Mr. Casaubon's will had not drawn Dorothea and Ladislaw together, something else would; for the moral forces at work in any direction can only be arrested by other forces of the same kind, while no moral jugglery will ward off the material effects of causes set to work long before. By way of relief from such troublesome spectacles, the Garth household is invaluable, with its common-sense happiness not corrupted by an undue contempt for "notions." The choruses of slightly belated popular wisdom, the Featherstone family, Mrs. Dollop's clients, the Middlemarch tea-parties, the dowager Lady Chettam's society, appear from time to time to comment with their usual insight and *à propos* on the doings of their betters. But it is perhaps a mistake to suppose the intention of this class of character to be altogether satirical. The author spends too much invention upon them for them to be quite so stupid as they look. The minds of Mrs. Waule and sister Martha, as of Mrs. Holt and the Tulliver connection move erratically, but their reasoning is often so imaginative that it would be scarcely a compliment to suggest that they only represent, as choruses should, the opinions of the inspired *vox populi* in the process of making: they are an idealization rather than a caricature of the popular sense.

In a work that has scarcely a quality which is not a merit, it is hard to determine what points to leave unnoticed. The gift, shared only, amongst contemporaries by Mr. Browning, of choosing similes and illustrations that do really illustrate the nature of the things compared, is exercised, if anything, more freely than in the author's other works; but her style, always polished and direct, seems to have become still more sharply condensed; the dialogues, always natural, still more simple in their force. This is especially true of the scenes in the last book, where Dorothea probably uses fewer and plainer words than have ever served to express deep feeling before. Mastery like this is the best title to immortality, and posterity will only do the present generation justice if it believes that real emotion speaks so now, if it speaks at all, though in real life it more commonly observes an awkward silence. Many of the less serious conversations have the same classical perfection of finish; one, for instance, between Mary Garth and Rosamond, near the end of part i., will show to those curious in such matters better than all Mr. Trollope's voluminous works, how girls in the nineteenth century discuss the matters in which they are privately interested. The family circle of the Vincys in the chapter before is scarcely inferior, and though we only see in it now a singularly faithful sketch from nature, there can be little doubt of its outliving the nature it represents. It is a little curious that Mr. Brooke, who represents a type, should seem, according to the general experience, to be a commoner acquaintance than Sir James Chettam, who represents a class, which we should be loth to think threatened with extinction. Both are friends of whom one does not soon weary of telling, but if we had indefinite space at command it would be better spent in quoting their sayings or the author's own epigrams. Failing this resource, we can only return to the point from whence we started, the natural incapacity of criticism (or critics—"the people who have failed in literature and art") to throw much light upon a work like *Middlemarch*. All critics are not like Mr. Borthrop Trumbull, who "was an admirer by nature, and would have liked to have the universe under

his hammer, feeling that it would go at a higher figure for his recommendation." On the contrary, we hold that an auctioneer's catalogue of the divers and sundry beauties, rarities, and profundities of these admirable volumes, can add nothing to the impression which a leisurely perusal (let no one read them in haste) will leave on the mind of every man and woman whose mental and artistic perceptions are sound and unblunted. And if praise is unnecessary, it is impertinent. Spontaneous admiration is one of the few pleasures of life, but the spurious literary enthusiasm which has to be conjured up with a bed-roll of respected adjectives is a caricature of the true feeling. In fact, for the moment, we are of Sir James Chetnam's mind. He has just said: "I don't like Casaubon." (Can anything be more conclusive? if he had said: "I like Middlemarch!") "He did not usually find it easy to give his reasons; it seemed to him strange that people should not know them without being told, since he only felt what was reasonable." Except by the amiable baronet, reasons for *disliking* a person—or a book—are easily found; but the best reason for an admiration of *Middlemarch* is—the book itself.

H. LAWRENNY.

The Red Flag, and other Poems. By the Hon. Roden Noel, Author of *Beatrice*, and other Poems. Strahan and Co.

MR. NOEL'S new volume of poems marks a decided advance both in clearness of form and in melody of expression upon his earlier collection, *Beatrice*. He has succeeded in working out more unity of style, in harmonizing his thought and feeling, and in producing more sustained effects of music in verse, without sacrificing individuality. The poems which are contained in the book before us may be roughly classified under the following heads:—(i.) Social and Political, including the satire which gives its name to the volume, the long series of studies entitled "War," which deal with the events of the Prussian-French campaign, and the exquisite little lyric called "The Children's Grass." (ii.) Domestic or Personal, to which belong "A Christian's Funeral," "Life and Death," and one or two pieces of minor importance. (iii.) Landscapes; to this section may be referred the most completely successful and characteristic poems of the whole collection, particularly "Palingenesis," "Richmond Hill," "A Sea Symphony," "A Vision of the Desert," in all of which Mr. Noel displays his peculiar faculty of infusing philosophic reflection into his descriptions of nature, of painting with the most loving minuteness, and at the same time of irradiating the whole of his picture with human emotion or with deep religious feeling. (iv.) Descriptive pieces, which owe their charm to an intensity of passionate sympathy: of this class the most remarkable are "Azrael," "The Water Nymph and the Boy," and "The Dweller in Two Worlds." (v.) Songs, among which "Eric," "Was it Well?" "Early Spring" are perhaps most noticeable. This classification, which, by the way, is not based upon the order or grouping of the poems in the volume, for they are all printed as miscellaneous, may be useful as indicating briefly the range of subjects over which the author travels. It is probably upon the compositions of the third and fourth sections that the reputation of Mr. Noel as a poet of marked originality will ultimately rest.

The piece which gives its title to the book, is a satire on the hollowness of our vaunted social security. The glare of Paris in flames is shot upon London smouldering and somnolent, with pauperism lying cheek by jowl aside of sleek ecclesiastical hypocrisy, effete cynicism, frantic and unsympathetic aristocracy. The personages introduced are a

sickly artisan and his family, a pompous dignitary of the Church, an irresponsible reviewer, a dinner parasite, a fashionable couple. Before a wretched hovel in Westminster, at the window of which the pauper leans to breathe the air, pass all the comfortable people; and scraps of their conversation, as overheard by him, are retailed to us by the poet. In the pauses of the poem, like a tolling bell, recurs the ominous refrain, "And there is *Peace* in London." This is the machinery of "The Red Flag." The situation is finely conceived and powerfully presented. The sincerity of the poet, his intense feeling for the terrible, the realism with which he has wrought every detail of his picture, and his passionate sympathy with the oppressed, make the general effect of this poem very impressive. As a satire, "The Red Flag" is by no means so powerful as it is when regarded as a highly realistic picture. Mr. Noel has neither the Juvenalian fluency of invective nor the Popian trick of satiric epigram. The force of his attack consists in the vehement intensity of his grasp on actual facts and possible consequences. In reading his poem, we seem to breathe the stagnant atmosphere which precedes a tempest:

"When Jove
Will o'er some high-iced city hang his poison
In the sick air."

Yet some of the merely satiric touches are powerful and pointed. The portraits of the soured critic and of the professional diner-out are both excellently bitter. Turning from "The Red Flag," we notice the same quality of passionate realism in "The Children's Grass." This lyric presents companion pictures of the Thames at Richmond and the Thames below London Bridge; of the child who in the one place—

"Chose to pull the tender stems
Where the dew-drop lingers,
And marvelled when the limpid gems
Fell upon his fingers"—

And of the little artificial-flower-maker in the other, who—

"Decks the blades with glass,
Sprinkles one and then another,
As with dews of grass.
* * * * *
Starved and very pale she seems,
With a hollow place
Dark beneath her eyes, how wearied,
Lashless looking on the bleared
Mimic grass,
Dewed with glass!"

There is no effort, by any reflection or moral-making, to bring out the pathos of the contrast. The two pictures, carefully wrought, tell their own tale. Though "War" is unequal in conception and execution, it contains many passages noticeable for the same concentrated power of description. Perhaps the best is the lyric entitled "The Roses of Bazeilles," which was suggested by Mr. Bullock's account of rose-trees blooming among the charred and blackened ruins of the burned village.

It is in his landscapes that Mr. Noel excels. The poems of which we have been speaking hitherto owe their finest quality to enthusiasm for actual life and contemporary history: they are full of the freshness of the present, the pulses of common humanity, the sympathies of a large and loving heart. They prove that the poet need not return upon the past for material. But in "Palingenesis," and "Richmond Hill," and the "Sea Symphony," Mr. Noel exhibits a rarer quality of artistic production. These poems are steeped in thought and feeling: Nature is represented with the most minute and patient accuracy; yet each

description is pervaded with a sense of the divine mysterious life that throbs within the world, and a passionate joy is kindled in the poet by his close communion with the outer world. Wordsworth and Goethe had both familiarised us with something of the same sort. But Goethe's pantheism was more scientific, Wordsworth's more contemplative, than Mr. Noel's. We need to travel back to the *Bhagavadgītā*, or to take Walt Whitman from the shelf, if we seek to match the pantheistic enthusiasm of the climax to "Palingenesis." The promise of Mr. Noel's earlier poem in this style, "Pan," is here fulfilled. The "Sea Symphony" has less of religious thought, more of human emotion in it. Perhaps this study illustrates Mr. Noel's power of painting at its best. The successive scenes of Tempest, Calm, Twilight, and Breeze, recall Brett, Moore, Whistler, and any others among our masters of marine painting who have been successful in rendering the moods of the "howler and scooper of storms—capricious and dainty sea!" The descriptions, though minute, are not tedious, because they are full of restless movement, and vitalised with emotion so intense that the keen vision of the poet is communicated by it to his readers.

The glamour of water is rendered with wonderful felicity in the "Water Nymph and the Boy," which in many respects is the best poem in the book. Taking the legend of the Naiad who draws downward to herself and death a beautiful mortal, Mr. Noel has, by the force of his intense and realistic treatment, invested an old subject with a new charm. There is something irresistibly fascinating in the dubious fable-land that lies between humanity and nature: and this fascination has been consummately rendered by Mr. Noel, who blends the images of the water and the boy in a blaze of noonday gorgeousness. The song of the nymph at the end—

"Father and mother,
Weeping and wild,
Came to the forest,
Calling the child;
Came from the palace,
Down to the pool,
Calling my darling,
My beautiful!" &c.

seems to suggest some of Weber's eeriest and frailest melodies. And to heighten the effect of this picture, Nature in her brightest mood is placed in contact with the highest product of civilisation. The boy is no mere Hylas or Narcissus, but a very high-bred and delicately nurtured young gentleman! "Azrael" is a summer-night study of the same order, in which human passion and the luxury of the world are wrought together into a shot-silk sort of splendour. A still further blending of the gorgeous in description and the passionate in feeling, with the addition of a philosophical conception, distinguishes the "Dweller in Two Worlds." This poem narrates, under the form of allegory, the experience of a soul which habitually lives in a state of division between higher and lower impulses. Harmony is in the end produced by a return to the pantheistic philosophy which lies at the root of all of Mr. Noel's thought, and which is beautifully expressed in the passage which we propose to quote. The discord of pain or sin, passing through musical modulations, until it fades into divine silence; what image better expresses a modern nineteenth-century dream of Nirvana?

"Last, while the clouds from all the mount were torn,
In desolate lower roots of it a horn
Resounded harsh and loud; but higher rocks
Multiplied into most ethereal shocks
Of melody the sound, which, as it passed
To loftier shining regions, ever amassed

A more ideal spiritual tone;
Till, like a delicate subtle flame, it won
Its way to yonder battlements of ice,
Exhaling there in silver paradise,
As from some luminous aerial places,
And sweet serenely modulated faces;
Dissolving now, an overblown faint flower,
Into a perfumed stillness evermore."

We have left ourselves but small space to speak of the minor poems in this volume. Yet it would not do to omit some notice of the elegiac sweetness of "Eric," or of the picturesque delicacy of "Early Spring," or of the wild passion of "A Lady to her Lover," or of the weird dream-atmosphere of "Death and Life," or of the quaint, old-world, musical charm which lingers about "The Old Piano." A brief quotation from this last lyric will form a fitting termination for the analysis of Mr. Noel's book. It is always well to end upon a soft and plaintive note that echoes in the memory:

"In the twilight, in the twilight,
Sounding softly, sounding low,
Float some cadences enchanted,
Eerie songs of long ago.

In the gloaming, in the gloaming,
Sits our child with lips apart,
Near her mother, who is singing,
Near the woman of my heart.

O how thinly, and how feebly,
Rings the ancient instrument!
When it opened, slowly yielding,
What a weird unwonted scent!

Plaining wildered all forlornly,
As it were surprised from death;
On a plate of faded ivory
Some lost name faint wavereth.

Wildered sorely, wildered sorely,
In oblivion mouldering,
To be challenged now for music
That the dead were wont to sing!"

Here we must break off abruptly: for the poem glides along like the frail minor tones of the harpsichord, and the ghosts issue from it like those strange cobweb phantoms which Miss Claxton used to send to make us pensive in the Dudley Gallery.

J. A. SYMONDS.

LITERARY NOTES.

The Accademia dei Lincei was occupied during its November sitting with the somewhat metaphysical question of its own identity with the famous Lincean Academy founded in 1603 by Federico Cesi, duke of Acquasparta. It was decided that, as the statutes of the modern foundation speak of it as a "revival" and "restoration" of the ancient one, the interruption of its existence does not in the least interfere with the right of the actual Academy to look upon the meritorious young Cesi as its real and only founder. The other proceedings were of some interest. The society proposes to publish a MS. *Trattato della mano dell'uomo paragonata alli piedi di alcuni animali quadrupedi e di uccelli*, written by Francesco Stelluti, one of the original Lynxes for incorporation with G. B. Porta's *Fisionomia del corpo umano*, published at Rome in 1637.

The increased political and commercial activity of which Vienna is the centre, and the Vienna Exhibition is to be the expression, has a counterpart in literary and theatrical circles. Complete editions of three distinctively Austrian writers, Grillparzer, Friedrich Halm, and the comic dramatist Bauernfeld, are either accomplished or in progress, and though matters have changed a little since Carlyle's expression of grim amaze at the space taken up by theatrical intelligence in all German newspapers, the energy and success of H. Laube's management of the new *Stadt-Theater* is still a matter of national interest. It is also asserted to the credit of the Vienna public that pieces

like *Fernande* and *La Coupe d'argent*, which succeed in Paris and Berlin, are either coldly received or actually hissed and withdrawn.

O. Hartwig writes to the *Allgemeine Zeitung* (December 10, 11) to invite Italian scholars to be on the watch for any MSS. or authentic extracts that may have formed part of a Chronicle, ascribed to Brunetto Latini, of which the earlier portion may perhaps be actually his work. Herr Hartwig failed to trace the fate of the Chronicle after the dispersion of the *Bibliotheca Gaddiana*, to which it was said to have belonged, but he has found fragments, one in MS. which he judges from the character to be certainly as old as Dante, another printed in Lastri's *Osservatore Fiorentino*, and a *Storiella antica creduta di Ser Brunetto Latini*, appended to a reprint of Brunetto's translation of three of Cicero's orations. The latter passage contains a slightly different account of the origin of the Guelph and Ghibellin factions from that of Villani and Dino Compagni. The betrothal of the daughter of Lambertuccio dei Lamberti to Buondelmonte is represented as an atonement or reconciliation after a former quarrel, and the taunt which led Buondelmonte to leave his promised bride in the lurch was that he was marrying for fear of his wife's relations, his own family having been the original aggressors. The saying, "Che cosa fatta capo a," which decided the Lamberti to take mortal vengeance for the affront is here given still less intelligibly *Che cosa fatta cappa a*, but the context shows the sense to be the same. Herr Hartwig shows from the same source that in Villani, iv. 29, there is probably the mistake of a century in the date (1113 for 1213), whence he argues to the importance of checking Villani's statements by contemporary documents.

The friends of German literature will be glad to hear that a French scholar, M. E. Müntz, has found unedited documents concerning one of the most illustrious poets of Germany whose biography has remained most obscure as yet, in spite of all researches, John Fischart. These documents are Fischart's act of marriage, dated St. Martin's day 1583, and several allusions to his family, especially his wife, who married again on the 24th April 1593 (she married J. L. Weidmann). These documents have been utterly unnoticed by the historians of German literature, Goedeke, Koberstein, Vilmas, &c., as well as by the latest editor of Fischart's works, H. Kurz. M. Müntz will soon publish these documents, and so little is known yet of Fischart's life that his contribution will be welcome.

A writer in the *Athenaeum* states that Mrs. Somerville had written an autobiography which she intended for publication after her death.

Art and Archaeology.

PAOLO PINO'S *Dialogue of Painting*. [*Dialogo di Pittura di Messer Paolo Pino*. Venice, 1548.] Reprinted by Dr. Max Jordan. Leipzig, 1872.

PAOLO PINO, whose rare manual has been reprinted with singular care by Dr. Max Jordan, was a painter, and a contemporary of Titian. Though Venice contains none of his works, and Venetian historians seem unacquainted with his name, he claims to be of authority in his craft, and we may admit that to some extent he commands our attention and respect. It would be a mistake to confound him with his namesake of Lucca, who was a pupil of the Caracci; for Venice, according to his own statement, was the place of his birth, and Savoldo was his master; but it would be no less a mistake to consider him identical with Pino da Messina, who flourished before 1500. There is reason to believe that Pino was one of the numerous portrait-painters who lived in comparative obscurity at Venice about the year 1550. In a catalogue of the Mantova collection, which was one of the celebrated ones at Padua, the portrait of Paolo Pino by himself was hung by the side of Mantova's likeness by Titian; and there is a good bust of a physician

by Pino, with the date of 1544, in the gallery of the Uffizi. As a composer of altar-pieces, Pino's skill is moderately displayed in a Virgin and Child with four saints (1465) which still adorns the church of San Francesco at Padua. He appears to better advantage as the designer of a marble pillar which once supported the flagstaff of the republic, or of allegories with framings and ornament in the public "Loggia," in the *castello*, of Noale.

Pino was not without patrons, having induced the doge Francesco Donato to accept the dedication of his book; nor was he without friends, as is shown by his correspondence (1464) with Alvise Cornaro, the Mæcenas of Venetian artists. His acquaintance with the literature of art was not large, and we doubt whether he had ability to master Pliny in the original; but if he took his knowledge of the ancients from translations or adaptations, he read Cennini at least in its primitive form; and it is probable that he was no stranger to the works or to the person of Vasari, both of which he mentions with approval. Vasari at that time had only written the *Lives*, and Pino could only have had them from the author. But, more than this, if we compare the pages of the *Lives* with those of the *Dialogue*, we trace the source from which Vasari derived his description—of Pordenone as a master of letters, of music, and of fence; of Sebastian del Piombo as a player of the lute, and of Savoldo as a painter of dawn or sunset scenes. A patient collation proves that Pino paraphrased numerous passages of Alberti's *Pittura*, accepting much that that essay contains, whilst rejecting much that Alberti inculcates. Casual allusions to Dürer's *Unterweisung* and Gaurico's *Sculpture* testify to some knowledge of the writings of these masters, whilst da Vinci's treatise—the best and most-celebrated of its kind—is passed over in silence. Nor is it the less remarkable that this should be so, as Savoldo, who taught Pino, had been in the service of the last duke of Milan, and might have communicated to his pupil what the Lombard craftsmen of the time knew so well.

The form into which Pino cast his dialogue is loose and picturesque. He quickly tires of the strict laws of art, and wanders from a lesson in optics to anecdotes, and from these again to the true mould of beauty in females or proportion in males. In a fit of ecstasy he contemplates "design as the mistress and forerunner of all other arts, the preserver of the effigies of heroes, the mirror of the passions, the perpetuator of spring and summer, and the limner of life and death." He recovers from this rhapsody to discuss the condition of artists in his day as compared with those of antiquity, not omitting to repeat the story of Zeuxis and the virgins of Crotona, or of Apelles and Campaspe. He describes the true painter in the words of Cennini as one who is led to the exercise of his profession by a natural inclination, and not driven to it by poverty and want; he defines painting under the three heads of design, invention, and colour, subdividing these again into parts after the model of Alberti. Like Alberti, too, he affects to consider the quality, the diversity, or the effects of colours as too well known to need further elucidation, but as to practice, he lays down rules which tell how widely the range of thought in craftsmen of the sixteenth century differed from that of craftsmen in the fifteenth. It has been well observed by Anton Springer that Alberti's aim was to raise art from the slough into which it had fallen in the hands of the degenerate Giottesques. With that view he dwelt emphatically on the plastic development of form, on the desirableness of a regular distribution and pleasant diversity of figures, the charms of colour, the delights of a pure and constant imitation of nature. He wished to enforce par-

ticularly the necessity for careful drawing; and he went so far as to recommend the first sketch of a figure in its anatomical development, the second in its nude aspect, the third in its appearance as clothed in drapery. To get at detail with accuracy, he suggested the use of the *veil*, through the squares of which the position of every muscle and bone might be seen and transferred proportionally and correctly to the panel. But in the course of years the purpose of the Tuscan reformer had been attained. Art had reached that form of perfection which preceded its inevitable decline; and it was quite natural that the principles of a Florentine of Masaccio's time should no longer have applied to the taste of a Venetian of 1548.

Pino, we observe, lays stress on points altogether different from those which occupied the attention of Alberti. He thinks it desirable to be simple in variety, but one figure at least, he declares, should be set in a manner "strained, mysterious, and difficult," in order to test the master's skill. To "use excessive diligence in contour or in lining out inner forms with the help of the veil, or to model in monochrome after the fashion of Giovanni Bellini," he considers useless and so much labour lost, because "the superposed colour must in the end cover all that has cost so much time and trouble to produce." In fact, he concludes, the diligence of a master should be moderate and not extreme. He must have a facile hand and a firm touch, and disdain the use of the stick; yet he must not affect the baneful rapidity of Andrea Schiavone; and he should have patience to lay by a work of partial completeness that he may take it up again with a fresh and critical eye.

In a further discussion between Pino's interlocutors as to various methods in painting, we note how completely the influence of Giorgione and Pordenone affected Pino's judgment. He treats of the various modes of fresco, tempera, and oil; and gives judgment in favour of the first, alluding with decisive particularity "to the mistake of Sebastian del Piombo in making use of oil for mural decorations that already show symptoms of decay." At Rome no doubt the frescoes of del Piombo underwent change, and suffered from the effects of time, but at Venice frescoes hardly outlived the painters who executed them.

The purpose and utility of perspective, the origin of the invention of painting, the claims of precedence variously urged by the advocates and opponents of sculpture, are touched upon; and a list of dead and living artists, with a description of the qualities which should go to make up an ideal craftsman, completes the dialogue.

What Pino teaches may have bespoken the attention of his contemporaries; it cannot fetter ours. There is more interest in the connection of his subject with the state of art and artists at the period in which he wrote. We detect the partial favour of a disciple in the sentences in which the public is accused of being hard and neglectful to Savoldo; but it is not easy to test the justice of the remark that "few painters, if judged by their works, are acquainted with perspective." The ideal of female beauty which Pino recommends is the full and rich ideal which attracts in the canvasses of Palma and del Piombo. The strained, mysterious, and difficult figure intended to test the painter's subtlety recalls the forcible but unnatural nudes which are almost invariably found in the compositions of Pordenone and Paris Bordone. The quaint advice to composers to adorn their subjects with trophies, hangings, festoons, and friezes, or dress their personages in armour, slashes, embroideries, fringes, veils, and gems, points surely to the schools of Bergamo and Brescia, out of which Savoldo came.

When Lauro asks Fabio why painting is in less veneration and less richly rewarded than in the classic times, Fabio replies that the cause lies in the unworthiness of artists who aspire to be masters before they have ceased to be disciples, in the ignorance of patrons, the penury of painters, and the sordid character of purchasers. Poverty prevents the professional man from conscientiously finishing his works; greed prompts him to produce much and rapidly. The public does not know a canvass of Titian from one by Bonifacio; every nobleman keeps a painter of his own; and he who should wait till he is called is likely to starve. How, under these circumstances, a youthful student can be expected to live is hard to say; nor is it practicable to ask him to lay by his work for future improvement, because such advice, though it may be good for a successful master, is a mere mockery to one whose pieces are worth so little in the market. Happy indeed, he concludes, is the youth who earns a day's salary by painting chairs or chests.

It is probable that this lamentation reveals the true state to which the great mass of artists at Venice was reduced in the sixteenth century. Ridolfi says that prices were then much lower than they became in his age. Titian, he observes, lived at first in moderate circumstances, and would never have been rich but for the patronage of the emperor. Pordenone's fortune was never large. Schiavone is known to have begged for a job from the painters of chairs and tables, who were licensed by an old law to keep shops under the porticoes of the Piazza of St. Mark; and the dealers who were known under the name of *bottegai* were infamous for buying the pictures of necessitous young fellows at nominal prices. The public hardly required to give orders when they could purchase for a trifle the best works of the second or third class at the exhibitions of the *merceria*. The custom of decorating the outer walls of edifices was so general, and the number of skilled men who could carry out such decorations was so great, that no one who built a house thought of engaging any one to adorn it, the matter being usually left in the hands of the master mason, who paid the designer with the wages of a journeyman. Tintoretto was certainly not one of the lowest of his craft, but he sometimes exercised his ingenuity in the endeavour to obtain a commission for a house front. The rich man Ravagnino stared when Pordenone asked fifty ducats for covering his palace with frescoes; but he was justified in his astonishment, because other men were to be had for much less money. With art and artists in this condition it seems almost unnecessary for Pino to recommend that the rivalry of painters should be settled by a competition "similar to that which took place between Titian and Palma Vecchio for the 'Death of Peter Martyr' in San Giovanni e Paolo."

An interval of nine or ten years separates the publication of Paolo's *Dialogue* from that of Lodovico Dolce, who wrote at Aretino's instigation to challenge and, if possible, to destroy, the supremacy of Michel Angelo. Ariosto held that some painters might be excellent, but Michel Angelo alone was divine; and this sentiment was shared by Pino in common with most of his contemporaries. Nor does it seem enough for him to affirm that a model painter ought to be a draughtsman like Michel Angelo and a colourist like Titian; he condescends to notice particularly as men of promise Agnolo Bronzino and Vasari, who were the best known representatives of Michel Angelo's school in the north. It is needless to point out that in Venice as in Florence the worship of Buonarroti was the prelude to the decline of art. Daniel de Volterra's casts from the Medici monuments at San Lorenzo were in the workshops of all Venetian painters. Santo Zago copied one of them on a house front at Venice. Tintoretto studied them by lamp-

light, and wrote on the wall of his studio, "Il disegno di Michel Angelo è il colorito di Tiziano." But in striving to combine the perfection incarnate in two of the greatest masters of the modern world, the later Venetians only hastened their own fall.

J. A. CROWE.

ART NOTES.

A correspondent of the *Allgemeine Zeitung* reports the discovery at Mantua of some frescoes apparently by the hand of Giotto. The Venetian photographer Raja happened to be in Mantua on business; he there found some works going on in an old palace of the Gonzaga family, in a chamber which had formerly served as a private chapel. The floor was strewn with painted fragments of the wall, and the business of destruction was going on rapidly. Raja succeeded in arresting the progress of the workmen, and, calling Professor Botti, of Pisa, to his aid, managed to restore the portions which remained intact, and to remove them safely from the surface of the wall. These fragments belong to two different paintings; the subject of one is the Madonna throned, attended by St. Catharine and St. Stephen (or Laurentius?); of the other, the Crucifixion. Of this latter, half of the figure of the Christ was still existing when Raja came upon the scene, but he has only been able to save an arm and three figures of angels. It is these portions which are reported to show evident tokens of Giotto's hand. He was at Padua in 1303, but nothing has hitherto come to light from which we might suppose ourselves authorised to infer that he was ever in Mantua. The remnants of this fresco must, it is asserted, be his work, and it is suggested as probable that the whole of the chapel was painted under his superintendence. The other fresco is stated to be of great historical value, but is not ascribed to Giotto; it is possibly by a pupil, who shows great force in modelling, but a less delicate feeling for form.

The sale of the paintings, drawings, and other works of art, forming the collection of M. Théophile Gautier, will take place at the Hôtel Drouot on the 14th, 15th, and 16th of January. They will be exhibited there for two days previous to the commencement of the sale.

A society has recently been formed at Paris which has for its object the encouragement of Christian art. It is entitled "Société de Saint-Jean pour le développement de l'art chrétien," and has just issued the programme of a competition which it is about to open. Artists are invited to present a cartoon representing St. John the Evangelist in some principal moment of his life. The moment is left to the taste and discretion of the competitor; the style must be that of the great epochs of Christian art, which is rather an indefinite prescription. The height of the figure must be at least one metre. The works are to be sent in on April 20, in order that they may be publicly exhibited from the 1st to the 20th of May. There are three prizes of 1000, 300, and 200 francs respectively. One of the best known names on the jury is that of M. Gaillard, the celebrated designer and engraver. The address of the bureau is rue de l'Université 47.

M. v. Gedéonow writes, in the *Allgemeine Zeitung* of December 1, a short article of comment on Herr Dobbert's notice of the group of sculpture ("Dead Child on a Dolphin") recently brought before public attention at St. Petersburg, and supposed to be executed as well as designed by Raphael. This notice also appeared in the pages of the same journal, and in writing it Herr Dobbert laid great stress on what seemed to be the weaker links in the chain of evidence which justify us in ascribing the work to Raphael. The distinguished director of the Hermitage endeavours to meet these criticisms wherever it is possible to bring a fair show of argument and probability against them, and concurs with Herr Dobbert in pressing the importance of instituting a searching comparison between the technical carrying out of the group in question with that of the "Jonas." M. v. Gedéonow evidently feels well assured that such a comparison, were it effected, could only serve to establish the reputation of the Hermitage group.

The second volume of the late Dr. Friederichs' catalogue of *Berlins antike Bildwerke* has been carefully edited by the author's friend, Dr. Weber. The volume contains the description of the small objects and bronzes in the old museum; it is no mere catalogue, but a work of high scientific merit, and fulfils the most exacting of the requirements of modern knowledge. The *Allgemeine Zeitung* for December 6 contains the commencement of a very careful critical notice of the work, the writer of which takes occasion also to give expression to the feeling of bitter regret with which all true students regard the loss which archaeological studies have sustained by the too early death of Dr. Friederichs.

A sixth edition of Sir Charles Bell's *Anatomy of Human Expression* has lately been published by Mr. Bohn. It is a reprint of the third edition, which was published posthumously, but had been previously revised and rearranged by the author, who had made a visit to the continent shortly before his death for the express purpose of verifying and testing his principles of criticism in art by study of the works of the great masters. The present edition has been carefully got up, but not one of the illustrations will for a moment bear comparison with the original plates in the first edition; the text is of course specially interesting as containing the author's last thoughts.

A translation, by F. E. Bunnett, of Dr. Wilhelm Lübke's *History of Sculpture* has been brought out by Smith and Elder. If the translator had only done his part as well as the publisher, we should have had to congratulate ourselves on the possession of a highly creditable performance. As it is, we are reduced to saying that the paper, the letterpress, the whole get-up, in short, is admirable, and the translation execrable. It is full of blunders of both sorts, blunders arising from want of knowledge of the language, and blunders arising from want of knowledge of the subject. "Zu," for instance, is rendered "to" instead of "at," so we have the citizens of Apollonia erecting a statue to Olympia. One might fill two or three pages of foolscap with a list of the really bad mistakes and ridiculous statements in which these pages abound, and for which the translator's ignorance is evidently responsible. This being the case, it is fortunate that no attempt has been made to give Dr. Lübke's text that revision of which it now stands so much in need, and which is absolutely necessary in order to fit the work for the purposes of students. A work which omits to mention in the department of ancient sculpture, the Diadumenes from Vaisson, now in the British Museum, or the sculptures from Priene, or to give the results of the recent excavations at Ephesus, cannot be looked on as making any attempt to meet the requirements of a standard text-book.

We give some of the most important of the objects sold and the prices obtained at the sale of M. F. L., which we announced in our last number. A cippus, in ivory, Italian work of the sixteenth century, depicting in bas-relief the subject of Theseus combating the Amazons, 3600 frs. Second cippus, time of Louis XIV., on which the battle of Arbela, after Lebrun, is sculptured, 405 frs. Bust of Diana of Poitiers, after the marble group by Jean Goujon in the Louvre (it is extremely doubtful that the head of the nymph in this group is a portrait), 12,000 frs. A comb of the time of Francis I., with figures, 510 frs. Another comb, an imitation of the old style, 750 frs. A bronze bust of a girl, by Saly, 1480 frs. Bust of Anius Verus, son of Marcus Aurelius, 2850 frs. The celebrated snuffbox, by Lioux de Savignac, fetched 12,100 frs.

New Publications.

HARTMANN V. DER AUE. Herausgegeben von F. Beck. (Deutsche Classiker des Mittelalters, herausgegeben von F. Pfeiffer. 5. Band.) Leipzig: Brockhaus.

KEKULÉ, R. Das akademische Kunstmuseum zu Bonn. Bonn: Weber.

KONEWKA, P. Zerstreute Blätter. München: Gummi.

PHILIPPI, A. Ueber die römischen Triumphalreliefe und ihre Stellung in der Kunstgeschichte. Leipzig: Hirzel.

Physical Science and Philosophy.

RECENT WORKS ON CHEMISTRY.

[FIFTH ARTICLE.]

XIII. Gmelin-Kraut's *Handbuch der Chemie*. Anorganische Chemie. 6th Edition. Vol. I. Part II., 1st to 4th Lieferung. Vol. III., 1st to 4th Lieferung. Heidelberg: 1871-72.*

THERE is nothing in the appearance of a new edition of Gmelin's *Chemistry* calculated to cause dissatisfaction. That the previous edition, occupying between nine and ten thousand closely-printed pages, was no sooner completed than a new one was advertised, must be taken rather as evidence of the esteem in which it and the science it expounds are held in Germany.

The nature of Gmelin's *Handbook* is now well known. It does not propose to furnish the reader with ideas; it does not expect to be read or studied with interest, or perhaps at all. It is only for consultation. In some respects, therefore, it differs from the systems of Berzelius and Gerhardt, whose writings are interesting because they are the work of men who endeavoured to extract the essence of the facts they recorded; who, not content with results, gave also reasons and criticisms. If, however, we deduct this architecture of thought, Gmelin's *Handbook*, as a repository of facts and details with their agreements and discrepancies, is the fullest, most accurate, and most modern of all the extant systems; and every one who consults it ought to feel grateful to author, editors, and printer, for the orderly arrangement of a vast mass of materials, even though the most ardent admirer of it must admit that it is sometimes not easy to find what one wants.

But there is no doubt that a new edition was necessary, for the Inorganic division was a considerable way behind, and it was requisite to bring it down to the present time. During the twenty years which have elapsed since the first volume of the fifth edition appeared, much has been done in rearranging the elements, bringing together those which evidently form natural groups, and breaking down the distinctions, formerly rather deeply drawn, between the non-metallic and metallic elements. The improvements are the outcome of the greater attention paid of late years to the resemblances and analogies of elements and their compounds, than to their differences: the latter having been fostered by the spirit of analysis which dominated in the chemistry of the earlier part of the present century, the former being the result or accompaniment of the synthetic investigations which are now more prevalent. Important also are the changes which have passed, or are passing, over chemical theory, and which have had an influence on the descriptive part of the science.

When, therefore, it was announced that the modern combining weights would be adopted in the sixth edition, we anticipated that the whole work would be thoroughly revised, so that not only would the discoveries recently made be inserted in the proper places, but the more conspicuous defects of the previous edition, even on its own plan, would be removed.

One of these defects was the want of arrangement in the description of the sources of, and methods of preparing, different substances. Thus, the sources of oxygen, to take the first body on the list, are set down apparently at random. There is no general statement as to the bodies which yield it; there is no classification of any kind of the reactions by which it is produced; and there is no indication as to the

best sources of it. Before one can be certain that a given substance will yield oxygen, one must turn over and examine several pages, on the chance of getting the information. The sources of iodine afford another instance of this unsystematic gathering of facts. It should not be forgotten that when a philosophical classification is impracticable, there is the alphabetical upon which to fall back.

Another defect, or at least an anomaly, exists in the arrangement of the non-metallic elements. That which the author gives (5th ed. i. 480) is electro-chemical: he begins with the most electro-negative elements (oxygen, fluorine, chlorine) and ends with the most electro-positive (boron, carbon, hydrogen), while nitrogen is put by itself. But when he comes to describe the elements he entirely reverses this order; for after disposing of oxygen he steps to the other extreme; hydrogen, and works backwards to fluorine, concluding with nitrogen. The result is that all the conventional arrangements and nomenclature are more or less disturbed. The compounds of the electro-positive elements appear under the electro-negative: for instance, the sulphides of phosphorus are to be found, not under phosphorus, as one might expect, but under sulphur; chlorides of sulphur, not under sulphur but under chlorine; and so on.

Granting that oxygen, hydrogen, and nitrogen, from their character, require exceptional treatment, it is not obvious what gain there is in the transposition; and there is nothing to bridge the gap opened by it between the author's and others' text-books, and between the two divisions of his own.

It is somewhat disappointing that in these particulars there is not the smallest difference between the fifth and sixth editions. The very same classification of the non-metallic elements is retained, almost word for word, although the electro-chemical theory is no longer dominant; the same inverted order is kept, oxygen, hydrogen, then carbon, boron, phosphorus, as before. Consequently under phosphorus one gets the oxides, but for the analogous sulphides one has to refer to sulphur.

To exclude tellurium, arsenic, and silicon at least from the non-metallic elements, as is still done, is now considered erroneous, but, in truth, the elements should have been arranged according to their generic characters, and the distinction between metals and non-metals dropped. It is true that to arrange the material according to current views would have cost more labour; but it would have less required the pen than the scissors, and the result would have been freedom from incongruities. It is pleaded that to accommodate those acquainted with the previous edition the old order has been retained. No doubt, had this been modified, comparison between the editions would have been rendered more difficult, if not impossible. But, on the other hand, those likely in future to use the sixth edition will be trained in the most modern chemistry, and will have small occasion ever to refer to the fifth. When Gmelin designed his work he adopted the views current in his time; had the editors modified the plan to suit the subsequent developments of the science, they would only have followed his example, and it is much to be regretted that they have not employed their experience in making their new edition as perfect as one can expect any system to be.

When we pass from these general features to more detailed examination of the work, we find that its modernisation is rather superficial. The combining weights and formulae, and the account of entirely modern researches, are of course modern, but in nomenclature, classification, and so on, the dregs of the old system are obvious. With respect, however, to the addition of new facts, very great changes have been made, and yet their introduction has not

* Since the above was written, the conclusion of Vol. I. Part II. and another section of Vol. III. have been received.

disorganized the work. Here it is, where possibly the absence of ideas shows to advantage, just as advantageously as the absence of bibliographic theory from the catalogue of a library. The facts in Gmelin's handbook are not unlike the specimens in a physiological museum. Each one is bottled up by itself, and has perhaps a bleached and lifeless aspect, or, by loss of spirit, has become somewhat shrivelled. Taken together, they may illustrate some general principle, but it is easy to shift them to and fro, to put new ones where the old stood dingily, to relegate these to the lumber room of history, or to put an end to them altogether.

On some such principle as this the editors have acted in preparing this edition, so as to make it modern, and to keep it within reasonable compass. In it the inorganic chemistry

still to be nominally in three volumes, but volume i. is in two divisions. The first is to deal with general principles, and is to be entirely revised by Dr. Naumann. No part of this has appeared. The second division contains the non-metallic elements, and is half completed. Volume ii., containing the alkaline, the alkaline earthy, the earthy and brittle metals, is still wanting; but of volume iii., which treats of the rest of the metals, the first four parts, containing the metals from zinc to iron, have been published.

In the portion occupied by the non-metallic elements there are improvements. Thus, certain properties which were formerly treated of in the general introduction are now given along with the other properties of the substances. Among these may be mentioned combining weight, vapour density, refractive index, and some others. On the other hand, some properties are transferred to the introduction.

Everywhere in these parts one meets with additions: numerous new sources of bodies have been opened up, new methods of preparation have been devised, many points left vague by the older chemists have been re-examined and well defined, revisions of particular properties and reactions by recent experiments have supplanted the earlier results.

Of the elements which have been reinvestigated and with success, the principal are carbon, sulphur, phosphorus, and iodine. The researches of St. Claire Deville and Berthelot upon the different states of sulphur have extended the account of that element from six pages in the fifth edition to nineteen in the sixth, and there is a similar extension in the case of phosphorus by the labours of Schrötter, Hittorf, Blondlot, and others. Several of the compounds of these elements have likewise been closely scrutinized and new results have been obtained. In particular, the sections may be specified upon the phosphides of hydrogen, the polythionic acids and the sulphophosphorus compounds. The constitution of the phosphites and of the iodates and periodates as explained by Rammelsberg and others has received full justice of the editor: but he has not mentioned that the assumption of these so-called condensed acids is not universally agreed to. This may have been excluded on account of its remote likeness to criticism.

It is impossible of course to enumerate all the changes which have been made; they will be found on almost every page. There are, however, one or two sections in general which must be referred to because they might have been more fully dealt with. The most striking is the literature of the science, which is meagre in the fifth, and remains much the same in the sixth edition. Again, the main sources of some of the elements might have been enumerated. Nothing is said about the distribution of oxygen, hydrogen, sulphur, phosphorus, carbon, boron, though lists occupying nearly five closely-printed pages of the different springs, plants, animals, and minerals in which bromine and iodine have been found, are given. No allusion is made to the recovery of sulphur from soda waste, and no list is given of the

substances by which oxygen is absorbed at ordinary temperatures.*

About entirely new bodies there is very little to say. No new class of compounds has been discovered, and comparatively few single bodies: the most important of these are ozone, oxysulphide of carbon, and graphitic acid. There are besides the selenides of phosphorus, seleniothionic acids, the oxides of iodine, perbromic acid, and a few others. The views relative to flame propounded by Frankland as a correction of Davy's are given, the absorption of hydrogen by metals, the various corrections introduced by Stas in the course of his determination of combining weights, the results of Bunsen's experiments on the solubility of gases in water and other separate investigations of importance are duly recorded.

But if altogether new bodies are rare, additions to our knowledge of known bodies are abundant, as we have already said; in some cases enough to lead to considerable modification of opinions already held. The number of these shows how activity chiefly prevails in checking previous work, and in obtaining precise information where the older investigators were baffled in their attempts. In reading these descriptions one sees how the names of Berzelius, Liebig, and others gradually give way to those of less known men, who, having the advantage of recent improvements and carried on by the spirit of the time, are able to amend and widen the older researches, and thus to dominate as authorities in the present.

This comparison of these two editions, separated by so short a period, is interesting on another account. One sees thereby how observation shifts from one object to another, how those which were of great importance twenty years ago have set for the time, and have had the account of them curtailed in the new edition. Catalysis, for example, which occupies many pages in the previous edition, is reduced to a few paragraphs in the present.* On the other hand, objects, which were just on the horizon formerly, are now in the zenith; and chemists who do not join in contemplating them, will hardly get credit for doing useful work, on whatever other object their gaze may be fixed. Ozone, which was mentioned doubtfully and indirectly in connection with electricity, has, during the interval, been so largely examined that it has acquired as much importance as ordinary oxygen. Following this, the various states of the elements have been minutely investigated, as will be seen by reference to carbon, boron, sulphur, and phosphorus, the varieties of which bodies are a little bewildering, especially when one does not know whether the experimental physical differences are sufficient evidence of essential chemical difference. All these phenomena are of recent discovery, so recent that in the fifth edition the term allotropy, now in regular use to denote the facts, appears on trial merely. For a similar case the discussion in the fifth edition on Wurtz's theory of the basicity of phosphorous acid, of the nature of an anhydride, &c., may be referred to. These doubtful views have since prevailed, and have given rise to investigations which have brought new compounds to light. Perhaps the most striking is the decision with which Graham's explanation of the phosphoric acids is given in the present edition. Propounded a little earlier than 1852, it is not accepted unqualifiedly in the fifth edition, but is discussed as if it were not yet quite confirmed. More especially as an extension of Graham's view, and as a deduction from atomicity and chemical structure, may be remarked the attempts to formulate the complex basic and anhydrous

* It is possible, however, that the account of catalysis may be transferred to the introduction, to be treated at length as a general condition of chemical action.

salts, such as the borates, pyrophosphates, sulphates, iodates, and periodates.

The theory, by which the character of these salts is elucidated, was unknown less than twenty years ago, and it has not yet been subjected to thorough-going criticism. It is not unreasonable therefore to suppose, that it will have passed the meridian in less than twenty years hence, and have gone as completely out of view as the electro-chemical theory, which had more of experiment and less of hypothesis for its foundation.

As far as it goes then, this new edition exhibits no falling off in fullness and accuracy; but it is a compromise, and it is to that extent temporary. Works which are purely modern will have the advantage in the meantime, though otherwise not so good. Sooner or later it must be entirely remodelled, and since the editors have seen fit at present merely to supply deficiencies, they may be able to take advantage of the delay to become the first expounders of a quite new arrangement of chemical natural history, based upon the next phase of chemical theory.

In general appearance the work is much improved. The figures of crystals are now printed along with the description, instead of being given on a separate plate at the end of the volume. There are no figures of apparatus.

We may hereafter avail ourselves of the appearance of the subsequent sections to point out novelties and improvements, or what may seem to be the reverse.

J. FERGUSON.

Correspondence.

TO THE EDITOR OF THE ACADEMY.

Exeter College, Oxford,
December 3, 1872.

SIR,—In the Notes of Scientific Work of the *Academy* of November 1 (vol. iii. p. 412) there is an abstract of a paper by Dr. A. Künth on *Pteraspis*, in which evidence is brought forward to establish a view as to the nature of the organisms included under that term, contrary to that which I (confirming by more extended study the views of Agassiz, Salter, and Huxley) have put forward in my monograph of the *Cephalaspidae*, published by the Palaeontographical Society. It is to me a cause of two-fold regret that Dr. Künth has perished in the Franco-Prussian war, for not only have we thus lost a chance of obtaining additional knowledge of the Berlin *Cyathaspis*, but I shall be unable to obtain from him the admission that his conclusion is not in accordance with the facts. Nevertheless, I am bound to point out how valueless is the evidence of Crustacean affinities for *Cyathaspis* adduced by him, and how firmly, on the other hand, it is established that the *Heterostraci*—or genera *Pteraspis*, *Cyathaspis*, *Scaphaspis*—are the remains of fish. 1st. The minute structure of these shields or cephalic plates is a very peculiar one, having a striated, a cancellous, and a laminate stratum. In the three genera it is beyond all doubt established that the structure is identical, as Dr. Künth admits. The same kind of origin must be assigned to the plates of all three genera. Hence, if *Pteraspis* be the remains of a fish, so are *Cyathaspis* and *Scaphaspis*. This position, I believe, is unassailable, and was admitted by Dr. Künth. 2nd. A specimen, most carefully figured and described in my monograph now in my possession, but which I shall shortly place in the British Museum, shows seven rows of rhomboid scales attached (not merely adjacent to) to a portion of the head-shield of a *Pteraspis*. That these are true scales or lozenges of sculptured calcareous matter is absolutely certain: it is also absolutely certain that the shield is Pteraspidian, and that the scales and shield belong to the same individual organism. This is clear from the figures drawn by Mr. Fielding, and cannot be doubted without charging both him and me with gross misrepresentation. 3rd. The scales are fish-like. I know of no Arthropod, nor any other organism except a Fish, which possesses any structure even remotely representing them. The shells of *Chitonidae* and *Cirrhipedia* are the only animal structures, except the scales of a ganoid fish (with which they agree exactly), which they could even vaguely suggest. Hence the *Pteraspis* shield was borne by an organism which

bore also scales like those of a fish: that is, a fish or fishlike animal. And what is true of *Pteraspis* is from paragraph 1 shown to be true of *Scaphaspis* and *Cyathaspis*. 4th. In figs. 8, 9 of pl. vii. of my monograph restorations of the form of the shield of *Pteraspis* are given, which are not hypothetical or schematic, but simple copies of the parts preserved in various specimens, some nearly perfect, also figured in the work. The form of his shield, and its details as to apertures, processes, &c. agrees with the view that it belongs to a fish most fully. It has not the remotest suggestion of crustacean affinities about it. Hence again, and by quite independent evidence, we have the piscine nature of *Pteraspis* indicated. Hence by paragraph 1 we have also additional warrant for considering *Cyathaspis* to be piscine.

Turning now to Dr. Künth's material, consisting of shields undeniably referable to my *Scaphaspis* and *Cyathaspis*, I find—if I may judge from his by no means carefully finished drawings—nothing which can be seriously put in the balance against the above incontestable demonstration of fish-like characters. If Dr. Künth's evidence did warrant his inferences as to crustacean affinities, it could not affect the facts cited above. We should have to regard the Pteraspadians as organisms combining the characters of fish and of Crustacea. But the evidence offered is really ludicrously insufficient. These shields occur often enough, crowded together in a slab of stone. Dr. Künth picks out two shields, accidentally brought into contact with certain most vague and irregular fragments placed near them—not by any means attached to them—and upon these raises a theory. The specimen, if we may judge by the figure, cannot really cause a moment's serious doubt in the mind of any person acquainted with the character of those figured in my monograph.

Whilst there is simply no scope for discussion upon the question of crustacean affinities raised by Dr. Künth, the possibility of the organic association in the same individual of the shields which I have assigned to the genera *Scaphaspis* with those assigned to *Cyathaspis*, and in other individuals with those assigned to *Pteraspis*, is altogether another matter. I myself carefully suggested this possibility, and mentioned the association of some of the forms, which suggestions Dr. Künth quotes from me. I do not think Dr. Künth's specimen bears any characters which should modify my view of the matter. There is nothing which leads to the notion that the two shields he figures were organically connected; and I have—dealing with an enormously larger body of material—pointed out in my monograph a number of facts which have led to an opposite conclusion.

A few months since I received from Herefordshire a specimen of a heterostracous shield, which is new, and is distinctly intermediate between *Pteraspis* and *Scaphaspis*. This I hope soon to figure and describe in the *Geological Magazine*. The rostrum is well developed, but is not distinctly marked off from the rest of the shield as in *Pteraspis*, nor are the cornual regions and apertures developed. This new specimen furnishes a timely support to the view that in *Scaphaspis* we have the same essential parts as in *Pteraspis* reduced or rather undeveloped.

E. RAY LANKESTER.

TO THE EDITOR OF THE ACADEMY.

December 10, 1872.

SIR,—In a review of Prof. Balfour's *Palaeontological Botany* in the *Academy* for October 1 (vol. iii. p. 370) I have referred to Prof. Oliver (*Natural History Review*, 1862) as having shown the greater probability of the American features of the European Tertiary vegetation having been derived from the east, rather than, with Unger and Heer, from the west. I wish to say, in answer to a communication that I have received, that I had fully in view Prof. Asa Gray's earlier (1859) and classical paper on the same subject. Prof. Oliver had however discussed the palaeontological evidence most in detail, and especially in reference to Heer's *Recherches sur le climat et la végétation du pays tertiaire* (1861), in which the Atlantis theory is vigorously maintained. For my purpose it was therefore most convenient to cite Prof. Oliver's essay.

W. T. THISELTON DYER.

Notes of Scientific Work.

Geology.

Vesuvius.—Mr. Wyndham, in a communication (December 2) to the Ashmolean Society of Oxford, pointed out the following results of

scientific interest from the late eruption. 1. Palmieri's view was confirmed that the visible effects are not the true commencement of the eruption; the initial period (the beginning of January in this case) being indicated by the shocks after a period of comparative quiet, evidenced by appropriate instruments. 2. Two minor craters formed below the Observatory were not explicable on Palmieri's theory as the result of eruptive force in the lava itself, but were, Mr. Wyndham believes, in connection with the principal eruptive source, with which they had the same periods of activity. 3. There was some evidence of the existence of diurnal maxima and minima. The eruption began at 3.45 A.M. on April 26; it attained its maximum at 3.25 on the afternoon of that day; and he thought there was also a maximum at 3 P.M. on the 27th. 4. The study of volcanic "bombs" was likely to lead to important mineralogical results; they often presented minerals externally which, it was clear, must have been formed by the action of heat in the presence of steam from the silicates of the lava and the constituents of the included rock.

The Coal Formation of Wyoming.—Professor E. D. Cope describes in a paper recently read before the American Philosophical Society, Philadelphia (*American Journal of Science and Arts*, December, p. 489), a large Dinosaurian, discovered during the past summer at Black Butte Station, on the Union Pacific Railroad, in Wyoming Territory. Professor Cope remarks that the determination of the affinities of this Saurian proves that these coal-beds belong to the Cretaceous series, and not to the Tertiary. Professor Cope was doubtless not aware that Mr. Meek had in 1871 referred Dr. Hayden's collections from this formation at Bitter Creek to the Cretaceous; and that he had also referred to it in 1870 the coal-bearing rocks of the same great series at Coalville, Utah, and at Bear River City, Wyoming. Indeed as long back as 1860 Mr. Meek, in connection with Mr. Engelmann, referred Captain Simpson's collections from these rocks to the Cretaceous. Two fossils only, from one part of the formation mentioned, were identified by Mr. Meek as Tertiary, but this was from a misapprehension in regard to the locality and stratigraphical position of the Hallville coal mines, which he supposed to be twenty to thirty miles farther eastwards, and at a much higher horizon; these fossils (the only species found at Hallville) are just such forms as might be either Tertiary or Cretaceous.

On the Last Great Glacial Period in New Zealand.—Captain Hutton read a paper on the last glacier period of New Zealand and the formation of the Wakatipu Lake at the Wellington Philosophical Society, September 17. In opposition to the views of Dr. Hector and Dr. Haast, he attributes the formation of the terraces so common in the valleys in the South Island to marine action, advancing the view that New Zealand has been submerged beneath the sea since the valleys were eroded by glaciers, the former extension of which he attributes solely to extreme elevation of the land during a preceding period, considering the view expressed by Dr. Hector that there has been a reduction of the area of land above the snow line by the erosive action of the glaciers as unnecessary and exaggerated. Speaking of the Canterbury plains, the author stated that Dr. Haast's sections show that they are nearly level in a line parallel with the coast between the Rangitata and the Waimakiriri, and that the gravel formation wraps round the spurs of the hills at the same level that it has at the river gorges. He considers that these facts, and also the occurrence of vegetable deposits below the gravel of the plains, are readily explained by supposing these to be of marine origin, and quite inexplicable on the river formation theory. Another proof of recent elevation is the fact that the glaciers are now advancing and overriding their terminal moraines. The absence of striae on the rock surfaces the author considers to be a strong proof that the glaciers were extended during the Pliocene and not during a more recent period. The origin of deep lakes, taking Wakatipu as a type, and the sounds on the west coast were next discussed, with the view of proving that their formation is not due to subsidence or unequal depression, but only to the scooping out of the rock by glaciers.

Physiology.

Amount of Carbonic Acid excreted by the Skin in Man.—Dr. Hermann Aubert, of Rostock, contributes a paper on this subject to the last part of *Pflüger's Archiv* (vol. vi. part xi.). The results obtained by previous experimenters upon this point are somewhat discrepant; Gerlach, in 1851, estimating it at 8 or 9 grammes in the twenty-four hours, from the whole surface of the body; Reinhard, in 1869, at only 2.23 grammes; while Scharling, in 1845, estimated it at 5.7 grammes. Aubert has made fresh experiments with modern appliances, and has placed the subject in a close box accurately adapted to the neck, but with tubes for the adit and exit of air attached to it; the latter, of course, being again connected with apparatus for the analysis of the air containing the products of the cutaneous transpiration. The general result at which he has arrived is that in the course of twenty-four hours a maximum amount of 6.3 grammes (97.272 grains), a minimum of 2.3 grammes (35.512 grains), and a mean of 3.87 grammes (59.7528 grains) of carbonic acid are eliminated from

the whole surface of the body below the neck. If to this be added that of the head, he thinks the entire quantity may be reckoned at 4 grammes, or a little more than one drachm or 60 grains. The temperature causes considerable variation; in the above experiments it was about 30° Centigrade, or about 86° Fahr. Experiments made directly with a view to determine the effects of temperature showed that at 29° 6 C. the amount of carbonic acid eliminated was 2.9 grammes; at 30° C., 3.24 grammes; at 31° 1 C., 3.78 grammes; at 31° 3 C., 3.84 grammes; at 32° C., 4.7 grammes; and at 33° C., 6.3 grammes. When compared with the total loss of carbonic acid in the twenty-four hours by the lungs, which amounts to 900 grammes, the proportion thrown off by the skin may be almost disregarded.

Circulation in the Spleen.—Olga Stoff and Sophie Hasse, of St. Petersburg, give an account of their researches on the circulation of the spleen in the *Centralblatt* (No. 48). Two views are entertained upon it. On the one hand, it is believed by many, as by Billroth, Schweigger-Seidel, and Kyber, that the blood path is a closed one, or, in other words, that the arteries break up into capillaries, which again reunite to form the veins. Others, as W. Müller, hold that the arteries discharge their blood into lacunar spaces, from whence the veins arise. Stoff and Hasse support the latter view; their experiments were made on the spleens of the pike, frog, salamander, duck, pigeon, fowl, sparrow, falcon, guinea-pig, rabbit, squirrel, and mouse, as well as of man, and they are decidedly of opinion that the smaller vessels break up into lacunar spaces into which the blood corpuscles pass.

Researches in Bone and Cartilage.—Under this heading, Dr. C. Heitzmann gives the results of many observations in the last part of *Stricker's Jahrbücher*, completing that journal for the year 1872. He describes carefully the character of the cells of healthy bone, for the examination of which he recommends the lower part of the femur of the rabbit both fresh and preserved in Müller's fluid. The canaliculi and their anastomoses, he says, can be well seen in portions of bone from which the lime salts have been removed by lactic acid. He enters fully into the microscopical characters of inflamed bone. In such bone the solution of the calcareous salts takes place first in the immediate vicinity of the vessels. The areas free from lime have sharply defined contours, which often correspond to the limits of the bone-cell territories, though they are often also independent of them. In the further progress of the inflammation, the cell-bodies enlarge, and their nuclei divide, the matrix at the same time melting down, both along the contours of the vascular canals and in the centre of the bone quite independently of the vascular canals, leading to the formation of cavities. Lastly, a differentiation of tissue takes place of the substance of the enlarged and now free bone-cells, part forming a yellow homogeneous, highly refractile substance, and another part a colourless, finely granular substance. In regard to the formation of blood in inflamed bone, he coincides with the statement long ago made by Rokitsanski, that in certain diseased conditions processes take place in molten cells which lead on the one hand to the formation of capillary vessels, and on the other to blood corpuscles. From his researches on hyaline cartilage, he finds that the bodies of the cartilage cells possess radiating processes which by their anastomoses with each other form a delicate varicose network in the matrix. These processes are very broad and large at the points of transition of the hyaline cartilage into the striated fibrous cartilage and into the periosteum. He then describes at length the effects of injuries to cartilage.

The Kombé Arrow Poison.—This poison is obtained from the *Strophanthus hispidus*, and is used by the natives of Africa. Dr. Livingstone gives some account of it in his *Narrative of an Expedition to the Zambesi and its Tributaries*. In hunting, he says, the natives follow the game with great perseverance and cunning. The arrow making no noise, the herd is followed until the poison takes effect and the wounded animal falls out; it is then patiently watched till it drops, a portion of meat round the wound is cut away, and all the rest is eaten. The physiological characters of the poison have recently been investigated by Dr. Fraser, of Edinburgh. The plant has been examined by Prof. Oliver, of Kew, who has named it *Strophanthus hispidus*, and finds that it belongs to the poisonous order *Apocynaceae*. Dr. Fraser concludes that the poison acts primarily upon the heart, and produces as the final result of this action paralysis of that organ, with permanence of the ventricular systole. Pulmonary respiration continues in cold-blooded animals for several minutes after the heart is paralysed. The striped muscles of the body are acted on, twitches occur in them, their tonicity is exaggerated, and finally their functional activity is destroyed; the muscles being hard, and soon after acid in reaction. These changes are accomplished subsequently to the final effect upon the heart, and are the result of a direct contact of the substance with the muscles themselves. The reflex function of the spinal cord is suspended soon after the heart is paralysed, but the motor conductivity of the spinal cord and of the nerve trunks continues after the striped muscles of the body are paralysed. The lymph hearts of the frog continue to contract for many minutes after the blood heart has been paralysed.

Botany.

Fertilisation of Abutilon.—Fritz Müller has described the fertilisation of different species and varieties of *Abutilon*, which are of special interest from the facility with which hybridization occurs in that genus. The author's observations were in opposition to those of Gärtner that "artificial fertilisation of pure species generally produces a smaller number of seeds than natural fertilisation." Müller found, on the other hand, with several species which he was able to investigate, that in the natural condition, although the stigmas were freely pollenised by the agency of insects, yet a comparatively small number of seeds came to perfection, while artificial pollenisation almost universally produced a much larger number of seeds. In another point also Müller's observations are at issue with those of Kölreuter, Herbert, and Gärtner. These three observers all maintained that, when a pistil was pollenised simultaneously by the pollen of two different foreign species, both were not efficacious, but only the one which had the closest relationship to the female plant. Müller, on the other hand, records, without hesitation, the simultaneous production of hybrids between one species and two others, the pollen of which was applied to it at the same time.

Structure of Parnassia.—Gris, whose recent death is a heavy loss to French botany, recurs (*Mém. de la Soc. de Cherbourg*, tom. xvi.) to the question of the peculiar structure and arrangements of the stamens in *Parnassia palustris*. A large number of botanists, including Humboldt, De Candolle, St.-Hilaire, and Le Maoût, have stated that these are specially contrived for self-fertilisation. C. C. Sprengel had, however, pointed out as long ago as 1793 that the indications are rather the reverse, the anthers casting their pollen outwardly, so that it is almost impossible that any of it can fall on the stigma, which, moreover, is not mature until a considerably later period—a view supported by Vaucher and by A. W. Bennett (*J. Linn. Soc. Ap. 1869*). Gris entirely confirms this latter view. He also supports the statements of the last-named writers that the stamens gradually lengthen while in close contact with the pistil, and do not in turns approach it, like those of *Saxifraga*, as is usually stated in botanical text-books.

The Origin of the Spanish Chestnut. Ettingshausen discusses (*Sitzungsb. der k. Akad. der Wiss. of Vienna*, 1872 div. 1) the ancestry of *Castanea vesca* (the sweet or Spanish chestnut). In the fossil flora of Leoben, not only the leaves, but even the male catkins, of a species of *Castanea* are found, in such a state of perfection that the anthers can be recognised. The form of the leaves, &c. being very variable, these have been described as several species of Cupuliferae from the Tertiary formations. Of *Castanea atavia* (Ung.) we have also remains of the spiny husk and of the fruit. The leaves of this species pass over gradually into those of *C. vesca*, those obtained from the newer formations showing a gradual approximation to the present type; and hence our present species appears to be a lineal descendant from the *C. atavia* of the Tertiary. *C. Ungerii* (Heer) from Greenland, and *Fagus castaneaefolia* are the same species, which must have had at one time a very wide distribution. Seventeen nature-printed plates illustrate the variation in the leaves.

Fossil Plants of the American Tertiaries.—Lesquereux, in a supplement to the fifth report of the U. S. Geological Survey, points out (*American Journal of Science and Arts*, 1872, p. 495) the close connection between the Tertiary American Flora and that at present existing. This is especially indicated by the fossil plants of the Green River station (referable to the Upper Miocene). Besides species of *Salix*, *Myrica*, *Rhus*, and *Ilex*, intimately related to species now existing, there is an *Ampelopsis* and *Morus*, indicating by their marked affinity the origin of the existing widely distributed Virginian creeper and red mulberry.

Peloria in Labiatae.—Peyritsch continues (*Sitzungsb. der k. Akad. der Wiss. of Vienna*, 1872) his researches on abnormal regularity in the flowers of Labiatae. The preponderating occurrence of quaternary types in the apical and lateral regular flowers he considers to be in contradiction to the assumption of a primary quinary type in this order. The assumption that the four stamens and the constant reversion to fours in the pelorian flowers represent an original quaternary type has the advantage of simplicity; and the number and position of the flower-leaves is then in accordance with the almost invariable arrangement of the leaves and bracts, which only on the rarest occasions depart from a cruciform and decussate position.

Influence of Foreign Pollen on the Parent Plant.—Asa Gray adds (*American Journal of Science and Arts*, December 1872) another to the already numerous instances which have placed this mysterious phenomenon beyond dispute. An apple (spitzenberg) produced a fruit half of which was (at least as to the surface) spitzenberg, the other half russet. A tree of the latter fruit stood about two hundred yards off. The division into two exactly equal parts is quite unexpected; as the styles and carpels were five, we should have expected the division to be into fifths. Moreover, the action of the pollen in this case is, morphologically, on the calyx, not upon the pericarp.

Stamens replacing Ovules.—Godron (*Mémoires de la Société de Cherbourg*, vol. xvi. p. 120) has described a double-flowered *Petunia* in

which the ovules were replaced by anthers. The pistil occasionally also presented as many as three, four, or five carpellary leaves instead of two, the normal number. The flowers of *Petunia* become double by the conversion of stamens into petals; a certain number of the stamens, however, usually continue polleniferous, and their pollen is stated, when used to fertilise single-flowered plants, to determine the production of an abundant progeny of plants with double flowers and varied colours.

Remarkable Aroid.—Mr. Bull has flowered (for the first time in the Old World) at King's Road, Chelsea, *Godwinia gigas*, the remarkable Aroid brought from Nicaragua by Dr. Seemann. It only produces a single leaf, and after this has died off the inflorescence makes its appearance. In the middle of December the dark chocolate-purple spathe was 1 foot 10 inches long, and was supported on a mottled peduncle measuring 1½ foot.

Structure of the Flowers of Welwitschia.—Professor M'Nab communicated to the Linnean Society (December 19) his observations on the development and structure of the flowers of *Welwitschia* which he had studied in specimens communicated to him by Dr. Hooker. He considered the male flower to consist of four series of opposite and decussating parts. The two outer form a perianth, which is succeeded in order by two primordial stamens, each of which subsequently branches into three, and by two carpels, between which is the undeveloped extremity of the axis. In the female flower the two inner parts of the perianth, the two primordial stamens, and the two carpels are not developed. The extremity of the axis which becomes the "nucleus" of the naked ovule is surrounded ultimately by a circular integument. Strasburger differs from Professor M'Nab in considering that the stamens form two whorls, one whorl consisting of two stamens, the other of four. This conclusion, after re-examining his specimens, Professor M'Nab is unable to agree with, as also with Strasburger's view, founded on the analogy with *Ephedra*, that the outer leaves of the female flower are carpels. *Welwitschia*, he considers, makes a very close approach to the Argiosperms, the axis of the flower ending in a mass of tissue which in the female is the terminal ovule.

New Publications.

- BAILLON, H. The Natural History of Plants. Translated by M. M. Hartog. Vol. II. Reeve.
- BOISSIER. Flora Orientalis. Tome II. Geneva: Georg.
- FLAMMARION, C. Histoire du Ciel. Paris: Hetzel.
- FRISCHAUF, J. Absolute Geometrie. Leipzig: Teubner.
- HAECKEL, E. Die Kalkschwämme. I.-III. Berlin: Reimer.
- HANKEL, W. G. Elektrische Untersuchungen. 10. Abhand. üb. die thermoelektr. Eigenschaften d. Aragonites. Leipzig: Hirzel.
- HARTSEN, F. A. Principes de Physiologie, avec une étude sur l'instinct et sur la nature du génie. Paris: Savy.
- HOEFER, F. Histoire de la botanique, de la minéralogie et de la géologie depuis les temps les plus reculés jusqu'à nos jours. Paris: Hachette.
- KNOP, A. Studien üb. Stoffwandlungen im Mineralreiche, besonders in Kalk- u. Amphiboloid-Gesteinen. Leipzig: Haessel.
- KOCH, L. Abnorme Aenderungen wachsender Pflanzenorgane durch Beschattung. Berlin: Wiegandt und Hempel.
- MARTINS, Ch. Sur la répartition des pluies dans le département de l'Hérault pendant les années 1870 et 1871. Montpellier: Boehm.
- MEYER, H. A., und MÖBIUS, K. Fauna der Kieler Bucht. 2. Bd. Die Prosobranchia u. Lamellibranchia. Nebst e. Supplement zu den Opisthobranchia. Leipzig: Engelmann.
- MEYER, L. Die modernen Theorien der Chemie u. ihre Bedeutung f. die chemische Statik. 2. Aufl. 2. Hälfte. Breslau: Maruschke und Berendt.
- NICHOLSON, H. A. Manual of Palaeontology for the Use of Students. With a General Introduction on the Principles of Palaeontology. Blackwood.
- PANCERI. Études sur la phosphorescence des animaux marins. Paris: Martinet.
- QUENSTEDT, F. A. Petrefactenkunde Deutschlands. 1. Abth. 3. Bd. Echinodermen. 1. Heft. Berlin: Fuess' Verlag.
- RECLUS, E. The Ocean, Atmosphere, and Life. Being the Second Series of the Phenomena of the Life of the Globe. Translated by the late B. B. Woodward. 2 vols. Chapman and Hall.
- RUSSOW, E. Vergleichende Untersuchungen betr. die Histologie der vegetativen u. sporenbildenden Organe. St. Petersburg.
- SAGOT. Légumes et cultures potagères de la Guyane française. Paris: Donnaud.
- SCHABUS, J. Grundzüge der Physik. Wien: Gerold's Sohn.
- TAMIN-DESPALLES, O. Alimentation du cerveau et des nerfs. Paris: Delahaye.
- WILD, H. Études météorologiques. St.-Petersbourg.

History.

ROLLS SERIES AND CALENDARS OF
STATE PAPERS.

Higden's Polychronicon. Vol. IV. Ed. J. R. Lumby.

THE value of this edition consists in the two Old English translations which accompany the Latin text, that of Trevisa (born 1342, died 1412), and that of the Harleian MS. 2261, for they represent to us the English of the fourteenth and fifteenth centuries. A very short extract will show the difference. "There burgeys were i-woned to stonde and loke aboute and telle here mery tales. Lucanus seith, in the feelde that hatte Marcius, at the grete feste, i-made sette the hedes of gentil men that were i-slawe in stede of messes uppon the mete bordes. Marius was so cruel that meny men hadde levere slee hem self than come in Marius his honde. Therefore Catulus the consul drank venym, and Merula, Jupiter his owne bisshop, kutte his own veynes, and bledde anon to dethe." (Trevisa.) "... where the citesynnes were wonte to sitte and talke. And as Lucanus reherseth he causede the hedes of the noble men of Rome, in a feste that he made, to be serveid to hym and to be sette on the table. The cruelnesse of Marius was soe grete that mony men hade lever to sle theym selfe then to putte theyrne in his mercy. Wherefore Catullus the consul drunke poysoun, and Merula the byschop Jovialle bledde to dethe thro the kyttenge of a veyne." (Harl. MS.) Much of the preface is perhaps superfluous, as a discussion of the relations of the original sources to each other is needless when we only want an edition of the Universal History popular in England in the Middle Ages, with the two accompanying translations. A very full English vocabulary ought to accompany the last volume of the work.

Letters and Papers, Foreign and Domestic, of the Reign of
Henry VIII. Vol. IV. Part II. Ed. J. S. Brewer.

THE preface and index to volume iv. are yet to come, in a third part, so that as to the second part we need say little more than that it contains the papers of the years 1526-1528. We have now therefore reached the times of the Divorce. There are many details about the founding of "Cardinal Colleges" at Oxford and at Ipswich by Wolsey, and about the monasteries suppressed for that purpose, lists of receipts from lay and clerical subsidies, the detail of the victualling of Calais, a number of papers showing the popular feeling, and much other valuable material. The vast mass of despatches to and from the Emperor and Francis I. and the Pope in these eventful years we must reserve for consideration till the editor gives us his long expected preface. The abstracts in all the series are now given somewhat more fully than at first, much to the advantage of the historical student.

Calendar of State Papers, Domestic Series, of the Reigns of Eliza-
beth and James I. Addenda, 1580-1625. Ed. Mary Anne Everett
Green.

It shows the need of a new arrangement of the Records that such an amount of additional documents should have been discovered. The searches have now, however, "been so exhaustive as to leave no probability of further discoveries of importance. The Domestic Calendars may therefore be considered as completed from 1547 to 1625." The Historical Commission may, however, still find much historical matter, especially correspondence, of importance—since in old days leading statesmen often kept the State Papers of their office,

and some of their descendants may do as Lord Shaftesbury has lately done, and give their ancestors' papers to the State again. The contents of this volume are of course very miscellaneous. There are a number of papers about Jersey and Guernsey and their old customs. Very many documents about the Roman Catholics at home and abroad are calendared, and the editor has given fuller lists of the names than before. There is a "Statement, addressed by Sir Fras. Bacon to the King, of the Chancery cause, Giles and Eliz. Warren v. W. Waller, relating to the lease of a house, which has been seventeen years in Court." New College men may be interested in a suit by Hum. Wickham, to get his two younger sons admitted to Winchester, and thence preferred to New College, and there admitted as of the blood of the founder. Secretary Walsingham's apothecary sends him medicines of a curious character; part of a unicorn occurs among them "for resisting poison which may be tried on animals to whom arsenic has been given" "he has also silver medals, idols of Isis taken from man. mies." The index is very good, e.g. many curious articles are mentioned under "Books," "Oxford," and similar headings.

The Calendar of Malmesbury.

IN Hampson's *Medii Aevi Kalendarium*, i. p. 435, seq., a calendar is given, from the Cotton MS., Titus D. xxvii., which evidently belonged to a Saxon monastery, but which Hampson could not further identify. But the entries and obits show that it was the *Calendar of Malmesbury*, e.g. at June 5 and 10 are "dedicatio Basilicæ Sanctæ Mariae," and "dedicatio monasterii Salvatoris Mundi," which prove the point; see William of Malmesbury's *Gesta Pontificum*, v. § 197; and similarly the mention of Abbots Aelfwine and Byrhtold; and the burial of Wulfnth, at October 18. The calendar was composed just after 1012, as the mention of S. Alphege shows; but the obits inserted range late down in the eleventh century. Hampson has only given part of the obits. It would be worth the while of the Wiltshire Archaeological Society to copy and publish it with full annotations. At January 3, Boca is a misreading for Boia. Brother Aelsinus, who wrote it, uses an easy cipher, formed by substituting the following consonant for each vowel, e.g. Aelsknxs mf scrkp-
skt = Aelsinus me scripsit. A complete volume of mediaeval English calendars, carefully edited, would be very instructive.

C. W. BOASE.

The History of Sicily to the Athenian War; with Elucidations of
the Sicilian Odes of Pindar. By W. Watkiss Lloyd. With a Map.
Murray.

MR. LLOYD'S name is so well known in connection with his reconstructive criticism of the accounts left us as to the grouping of the figures in ancient works of art that a parallel attempt to reconstruct the grouping of the ideas in Pindar's Epinician Odes, by means of a careful study of the varied relations of the Sicilian colonies with the mother country, is peculiarly welcome. He begins with a sketch of the earliest views of the Greeks about Sicily, as represented in the *Odyssey*. When the Greeks on their way back from Troy attempt to round Cape Malea, the fatal north winds carry them away, some down to Egypt, some on a long voyage among the wonderlands of the West. Men are so fond of localising old national stories that it is no wonder if various spots on the shores of Italy and Sicily were soon identified with those visited by Ulysses. Mr. Lloyd well points out that the account of Scylla and Charybdis, however exaggerated, is but a heightened study after the natural scene, and that this shows a certain amount of local

knowledge which must have been acquired from the information supplied by actual voyagers, Greek or Phœnician. Indeed, it is not improbable that the early discoverers of the rich lands of the West purposely exaggerated the dangers and horrors of the route to keep away competitors from the silver mines of Spain, or the tin and amber countries of the North. The account, too, of the cannibals does not now seem so strange after the late discoveries of the caves of such tribes on several coasts of the Mediterranean. The Cyclops Polyphemus, "vast as a mountain in bulk that peers above all others" (*Odys.* ix. 191), who throws huge rocks into the sea, is partially identified by Mr. Lloyd with a personification of Aetna as a volcano, and he ingeniously works out this idea in explaining the story of his struggle with the stream-god Acis for the sea-nymph Galatea, since the lava often injures the rivers. But we may remark on this that Aetna is believed to have been, like Vesuvius, long dormant, and its first eruption in historical times is dated, somewhat vaguely, "in the time of Pythagoras," some time after the Greek colonies had been founded in Sicily, and Humboldt (*Cosmos*, i. note 213) refers *Odys.* xii. 68, 202, 210, to Stromboli—*πυρός τ' ὀλοοῖο θύελλαι*. But allowing that the poets of Homer's time had a vague knowledge of Sicily, the voyage further west admits of no identifications. Scheria, the land of the Phæacians, cannot possibly be Corcyra; Welcker has even ventured to identify it with Britain. It is curious that the later Greeks of Constantinople knew so little of Britain that Procopius' island "opposite to the land where the ghosts are ferried across the straits" is as unreal as the realm of Alcinoüs.

From this discussion, our author proceeds to examine the accounts of the foundation of the successive Greek colonies, since Pindar's frequent allusions to the ancestry of his heroes and their connection with the leading heroic and sacred families of the mother countries are inexplicable without a minute knowledge of these subjects. Dissen did great service in pointing out that Pindar did not introduce legends arbitrarily into the Odes, but that traditional connection with the native country or concerns of the victor was an indispensable characteristic. Yet even Dissen did not always succeed in tracing this out in detail. Thus in an ode written for Hiero, descendant of a colonist from the isle of Telos (near the Triopian promontory of Caria), who was an hierophant of the Chthonian or subterranean gods (the very name Hiero probably alludes to the sacred functions of this family), the references to Thessalian stories are explained by Mr. Lloyd as due to the early connection between Thessaly and Caria in religious matters; and it is this Thessalian connection that brings in the traditions of Lacereaia and the Centaurs, and probably also the set of traditions as to Asclepius (whose worship at Cos and Cnidus was so renowned), since Pindar places the birth of the god at Lacereaia, on the Baebian Lake, and he was educated by Cheiron on the Magnesian mountains. In fact, the feeling of colonists for the mother-land was nowhere so intense as among the Greeks, independent as the colonies so generally were in a political sense. A prize at the Olympic or Pythian games, a recognition by the united representatives of the Hellenic race, an ode from one of the great poets which would be to them fame and immortality, was to them of inestimable value; they had thus won, or recovered, or vindicated, their place among those noble clans to whom Pindar ascribes all excellencies of mind and body as theirs by hereditary right. And this brings us to another point in which Mr. Lloyd seems right as against the commentators. Many of the moral remarks are often supposed to be intended as admonitions to Hiero and others, good advice, that is, to a tyrant, warnings against oppression, arro-

gance, avarice, and the like. But Mr. Lloyd points out that it would be the height of inconsistency to suppose that Pindar could introduce into an ode intended for public performance, and intended to be a glory and delight for the victor, any such reflections either upon Hiero or upon his friends or those he affected and favoured, as could not but be distasteful and disagreeable to him, and perhaps to most of those who were present. On the contrary, the poet often seems to be guarding him from cavil or open attack, speaking indirectly as of attacks that had been made on himself. Envy that assails the victor has not spared the poet, and he denounces his own calumniators with violence to make colourable the keenness with which he apprehends the injustice of like kind done to his patron—so he introduces occasion for enunciations as to how malice may be fairly coped with, and mischief turned back upon its authors.

The work is thus mainly an account of the great families of Gelo and Hiero, which took the lead in the early times of Sicily, and of the odes of Pindar written in their honour; each part of the discussion throwing light on the other. All the Sicilian odes are translated, and have separate introductions; and notices of the architecture and coinage of the island are, as we should expect from our author's previous writings, often brought in with good effect to illustrate his main subject. And we cannot but express our gratitude for his abstinence from anything like an array of learned references, and for the clear and pleasant English of the book.

C. W. BOASE.

Contents of the Journals, &c.

Bulletino dell' Instituto, November, describes the remains of the Aedes divi Julii, just discovered close to the temple of Castor and Pollux in the Forum. It had a platform in front (in which the beaks of the ships taken at Actium were inserted), from which Augustus spoke the funeral speech on his sister Octavia, and Tiberius that on Augustus.—Some inedited inscriptions from Athens follow, and a very curious Doric one from Selinus, which shows that the temple in which it was found was an *'Απολλώνιον*. It begins, *Διὰ τοὺς θεοὺς τοῦσδε νικῶντι τοὶ Σελινούριοι*, and then follows the list of Sicilian gods.

Gött. gel. Anzeigen, November 6.—Geiger continues his notices of recent works on the Humanists, this time taking Beatus Rhenanus, the friend of Erasmus, and similarly disposed towards the Reformation; and the whole of the number of December 4 is devoted to Durand de Laur's *Érasme, précurseur et initiateur de l'esprit moderne*, of which the reviewer judges somewhat unfavourably.—November 6 also contains a second notice of Hehn's *Kulturpflanzen und Hausthiere* (already reviewed at length in the *Academy*, vol. iii. pp. 309–313), with especial reference to the physical circumstances that condition the growth and spread of the various plants mentioned, e.g. as to the early existence of the chestnut in Europe.—Friedländer's *Codex Traditionum Westfalicarum* and Grotefend's *Handbuch der historischen Chronologie des deutschen Mittelalters und der Neuzeit* are also reviewed; the latter does for Germany what Sir H. Nicolas' *Chronology of History* does for England.—November 20.—Sloet's *Urkundenbuch* of Guelders is reviewed by Waitz; and Ewald's *Die Eroberung Preussens durch die Deutschen*, by Perlach; and Voigt's *Die Geschichtsschreibung über den Zug Karl's V. gegen Tunis* (1535).—November 27 has interesting notices of Tieftrunk's book on the opposition of the Bohemian Estates to Ferdinand I. in 1547; of d'Ovidio's attempt to show that the nouns of the Romance dialects derive their oblique case not merely from the Latin accusative, but from other Latin cases as well, and of Grundtvig's *Danish National Ballads*.

The Mémoires de l'Académie des Sciences morales et politiques de l'Institut de France, tome xiii., contains historical notices on the lives and works of Savigny, de Tocqueville, and Victor Cousin, by Mignet, and a number of valuable reports on the competing works examined in the various sections of Philosophy, Morals, Political Economy, Jurisprudence, and History. One of the reports in the latter is by Guizot, on the subject of the States-General. The volume is worth especial notice.

The companion volume, *Recueil des Discours, Rapports et Pièces diverses lus dans les Séances de l'Académie française, 1860–1869*, deuxième partie, contains (1) The Discours de Réception from 1866, e.g.

of Prevost-Paradol on succeeding Ampère—to which Guizot replies; of the Abbé Gratry on succeeding Barante—to which Vitet replies. (2) The Discours sur les Prix de Vertu. (3) Villemain's reports on the competitive works from 1866. (4) Papers by members of the Academy; two very interesting ones by Prevost-Paradol.

New Publications.

- CHRONIKEN, Die, der deutschen Städte vom 14. bis ins 16. Jahrhundert. 10. Bd. A. u. d. T. Die Chroniken der fränkischen Städte. Nürnberg. 4. Bd. Leipzig: Hirzel.
- CRAMER, Kreisr. J. Die Grafschaft Hohenzollern. Ein Bild süddeutscher Volkszustände. 1400-1850. Mit einer color. (lith.) Karte und 4 Tab. Stuttgart: Kirm.
- GÉRARD, Charles. Les Artistes de l'Alsace pendant le moyen-âge. Tome I. Colmar: Barth.
- KÖHLER, Pfr. K. F. Luther's Reisen und ihre Bedeutung für das Werk der Reformation. Nach Quellen bearbeitet. Eisenach: Bacmeister.
- KRAFFT, A. H. Chronik von Liegnitz. 2. Bd. 2. Abth. und 3. Bd. Liegnitz: Krumbhaar.
- LOCHNER, G. W. N. Geschichte der Reichsstadt Nürnberg zur Zeit Kaiser Karls IV., 1347-1378. Berlin: Lobeck.

Philology.

La Légende athénienne. Étude de Mythologie comparée. Par Émile Burnouf, Directeur de l'École française d'Athènes. Paris: Maisonneuve et Cie.

IN this "Study of Comparative Mythology," M. Burnouf has done good service to a science of very modern growth, by bringing to bear upon it the light afforded by careful and minute local research. His position at Athens has given him unusual facilities for the task, but it is to be hoped that others will be found to follow his example, as opportunity may be given them, in other parts of the world, so that the theoretical conclusions of the comparative mythologist may, by degrees, be thoroughly tested, as well as illustrated, by observing the modifications which the various myths have undergone from local considerations, and the influence which they have exercised on local religion.

The myth which naturally plays the most prominent part in the research of M. Burnouf is that of Athene, the patron goddess of Athens, and especially, as he shows, the tutelary deity of the Acropolis; which contained at least four shrines dedicated in her honour, as well as the three famous statues of Athena Polias, Athena Parthenos, and Athena Promachos. Starting with complete acquiescence in the views of Professor Max Müller as to the origin of the myth, which identifies Athene etymologically with *Ahanâ*, the Aurora of the Veda, and looks upon the goddess as the impersonation of the dawn, he works out its details with considerable minuteness, in respect both of the leading characteristics of Athene herself, and of her relations, on the one hand, with Zeus, her father, the heaven, from whose face the dawn appears to spring, and on the other with Poseidon, the producer of water. This latter god is in India, as in Arcadia, essentially the god of the waters of heaven, and so closely akin to, and sometimes scarcely distinguishable from, Zeus Ombrios; but in Greece he is generally connected with what the Greeks was the more important realm of water, and so to them is the Ocean God. It is, however, in the former capacity that he comes especially in contact, or rather in collision, with Athene: the special enemy of the dawn being naturally the monarch of the clouds. To sum up the legend in M. Burnouf's words:

"In respect of the daughter of the heaven, at the side opposite the horizon, there is another great deity who presides over the celestial ocean. The world is in dispute between these two powers: the one brings light and activity to the living beings which it contains; the other strikes the celestial mountains (*i.e.* the clouds), makes the waters

gush out, and opens the way to the divine horse whose movements Aurora controls. After the struggle, the god that causes the waters to flow communicates fertility to the earth, which, becoming his bride, gives birth to the plants and animals. So Aurora presents herself daily at the gates of heaven; peaceable or ready for combat, according as the sky is pure or cloudy. If it is pure, she is calm, serene, triumphant. If it is cloudy, she is a warrior driving far before her the deity who governs the waters, and forcing him to show his divinity by the blows which he endures, or the blessings which he bestows."

In all this, M. Burnouf is playing the part of a comparative mythologist pure and simple. It is true that he illustrates his points by reference to varieties of the legend as found at Corinth, Troezen, or elsewhere; and especially by contrasting the myth of Poseidon as it occurs in Arcadia with the modification of the same legend at Eleusis. In the former he is the cloud-god, wedding Demeter-Erinnys, herself a deity of heaven, probably to be identified with the dawn. In the latter Demeter has become the earth, and her consort, the father of the mysterious damsel, is Zeus, the empire of rain being now transferred to him from Poseidon, whose kingdom is there found in the watery plains of ocean. But all this might have been worked out from materials accessible at a distance from the scene of action: and the especial value of M. Burnouf's book lies rather in his careful and ingenious explanation of the facts of Athenian topography with reference to the myths.

Of this, the most striking example is found in his second chapter, on the astronomical facts of the Acropolis. It had been observed by previous writers on the subject, though by comparatively few of them, that, while all the temples on the Acropolis had in the main an easterly direction, yet none of them face due east, and, moreover, that hardly any two of them have their axes parallel to each other. Previous maps and plans, with the exception of those by Mr. Penrose, are singularly inaccurate on this point; and even he looks on the irregularity as interesting rather from the great beauty which it produces, in not only obviating the dry uniformity of so many parallel straight lines, but also giving exquisite varieties of light and shade, than because it is based on any scientific principle.

M. Burnouf, however, has endeavoured, and with considerable success, to show that this variety of direction is not arbitrary, but dependent on a principle similar to that which guides the orientation of Christian churches, and that the object in view was that the portico of each temple, and consequently the image of the deity within its shrine, should face the dawn on the day of the chief festival which it was intended to commemorate. It would have been more satisfactory if he could have proved his point with regard to the other temples also; but in respect to the Parthenon, the most illustrious of them all, his observations coincide remarkably with his theory.

He shows in the first place that, while the Grecian States generally regulated their year in accordance with one or other of the solstices or equinoxes, at Athens the summer solstice was the only one of these four dates which could reasonably be selected as the starting-point for the year, since on that day only of the four was the actual sunrise visible from the Acropolis. On all the others it was hidden by the intervention of some neighbouring height; but on that day it was visible through a gap between Pentelicus and Hymettus, so little higher than the Acropolis that the defect was approximately corrected by refraction. On the shoulder of Hymettus, at this lowest point, there is at present the monastery of St. John Kunigos, on the site of an old temple of Apollo Kunios (which surname M. Burnouf elsewhere shows to mean "the son of the Sun"), and a line drawn from the altar of Athene Parthenos to the sunrise at the summer solstice in 445 B.C., the presumed date of the

foundation of the present Parthenon, would exactly have passed through the site of this temple. The inference that this consideration decided the site of the altar of Athene is confirmed by the fact that another temple, of Zeus Hymettios, is known to have stood on the crest of Hymettus, to the south-east of Athens, exactly in the line between the altar and the sunrise at the winter solstice; and even more remarkably by an alteration in the site of the Parthenon itself from that of the older building on which it approximately stands. The change of position was noticed by Mr. Penrose and other travellers, but has hitherto been unexplained. M. Burnouf shows that it was rendered necessary by the variation of the angle formed by the ecliptic with the equator in the interval between the two buildings; since it was necessary to move the altar of Athene, and consequently the temple, so far to the north that the line between it and the sunrise at the summer solstice should still pass through the lowest point of Hymettus. Acting on this hypothesis, he finds that the alteration of position exactly corresponds to the variation of angle between 445 B.C. and 554 B.C., the date of the second administration of Peisistratus, to which time Mr. Penrose and others had already attributed the older building on architectural grounds.

But though these facts account satisfactorily for the position of the altar, yet we are met with a difficulty on finding that the temple, though situated directly behind the altar, so that a line which is actually traceable from the statue of the goddess to the altar passes through the centre of the portico, does yet not face the actual dawn, its axis forming an angle of $6^{\circ} 55'$ with the line from the altar to the temple of Apollo Kynos. This discrepancy is explained by M. Burnouf by the fact that the angle formed by the axis of the temple with the due east and west line exactly corresponds to the least zenithal distance of the sun in 445 B.C.; so that the direction of the temple is really determined by an independent consideration, but is equally referable to local solar phenomena.

In this way M. Burnouf confirms the belief, derived from philological considerations, that the worship of Athene is closely connected with the dawn; and shows that to that fact we are to trace the peculiarities in the position of at least her principal temple at Athens. If the data on which he grounds his arguments are not extensive enough to be absolutely conclusive, they are at least suggestive of further investigation; and we may hope that much light will in future be thrown upon the labours of the comparative mythologist, by similar intelligent contemplation of the myths in the concrete form which they assume in individual localities.

J. R. KING.

Rig-Veda-Samhitā. The Sacred Hymns of the Brahmins; together with the Commentary of Śāyaṇāchārya. Edited by F. Max Müller, M.A. Volume V. Published under the patronage of the Rt. Hon. H. M.'s Secretary of State for India in Council. Allen, 1872.

The Taittirīya-Samhitā. [Herausgegeben von Albrecht Weber. *Indische Studien*, Vols. XI. and XII.] Leipzig: 1871-72.

SINCE 1846, when Dr. R. Roth, now professor at Tübingen, published his essays on the *Literature and History of the Veda*, and thereby introduced a mass of new and brilliant light into the comparatively neglected field of enquiry opened through the researches of Colebrooke and Rosen, that branch of Hindu writings has received a steadily growing amount of attention at the hands of European Sanskrit scholars. To the general public, whose interest in Oriental literature has at no time been of a very enthusiastic kind, such historical and linguistic problems as are connected with the Veda, and the solutions proposed from time to time of some

of these, may seem but little attractive; but the student who deems it not unworthy of a lifetime to attempt to decipher the history of his race as reflected in its language, its thoughts, and its manners, and he who makes the origin and growth of language itself the sole object of his study, have long since learnt to consider the Veda as one of the primary documents for their enquiries.

The collection of hymns which constitutes the *Rig-Veda-Samhitā*, on account of its greater antiquity and purely literary character, has naturally claimed the lion's share of critical examination; and ever since Friedrich Rosen had published his *Rigvedae Specimen* (London, 1830), and his edition and translation of the whole of the first *Aṣṭaka*, consisting of 121 hymns (1838), there was among Sanskrit students and comparative philologists a growing demand for the entire text of this collection. At the same time the correct interpretation of these hymns was found to offer considerable difficulties to those whose knowledge of Sanskrit was derived from the literature of later times, when the dialect in which they were composed had in some degree become obsolete. It was, therefore, highly desirable that the aid afforded by native commentators should become generally accessible; the more so as there seemed reason to believe that the explanations offered in modern comments were but the latest redactions of the traditional exegesis carried on from remote ages through an unbroken succession of teachers. This meritorious, though arduous, task was accordingly undertaken by Dr. Max Müller, who, in 1849, after five years spent in collecting materials, published the first volume of his edition of the Rig-Veda hymns, together with what seems to be the only complete commentary preserved to our days, the *Bhāṣya* of Śāyaṇāchārya. The editor's confessions in his *Chips from a German Workshop* have since made us acquainted with the circumstances under which this magnificent work was permitted to see the light, thanks to the enlightened patronage of the Court of Directors in former, and the Secretary of State for India in our own, days. Three more volumes followed in 1852, 1856, and 1862 respectively; each looked forward to most eagerly by Sanskrit scholars, and imparting fresh vigour to Vaidik researches. After a more protracted interval the fifth volume, containing the whole of the ninth and about one-fourth of the tenth, or last, books, has now been issued. This delay, as Professor Müller informs us, has to be accounted for partly by the new course his studies had to take after his appointments successively to the chair of Modern European Literature and that of Comparative Philology in the University of Oxford; partly by a natural desire on his part to make known the results of his enquiries, and to contribute his share to the interpretation of the first outpourings of the Aryan mind. Besides, the difficulties which attend an edition of Śāyaṇa's comment increase considerably towards the end of the work, where omissions and mistakes become more and more frequent, and the restoration of the correct readings often hopeless. These circumstances combined seem even to have for a time endangered the completion of the work. So unsatisfactory a termination of this undertaking would certainly have been regretted by all who take an interest in these studies. Long as European scholarship may have outgrown the teachings of Hindu commentators in the interpretation of the Veda, the material assistance which their honest efforts have hitherto rendered towards a correct understanding of the poetical effusions of their forefathers will and can never be forgotten; and it is by this edition of Śāyaṇa, more than by any other work, that the name of Professor Max Müller will ever rank foremost among Vaidik philologists.

The value of the present volume is enhanced by the first

part of a complete *index verborum* of the Rig-Veda, which will no doubt prove extremely useful to all those who are engaged in the interpretation of these hymns. The unconditional adoption of the *pada*-, or detached, form for this purpose has certainly its inconveniences; but most of these will probably be removed by the scientific glossaries promised by other scholars. Besides, another valuable supplement, viz. an *index* of the *uttarapadas*, or last members of compound words, which, it is expected, will follow in the concluding volume, will supply at least some of the wants alluded to.

The literature of the *Yajurveda* has found its chief and most zealous cultivator in Professor Albrecht Weber. The *Vājasaneyi-Saṁhitā*, the textbook of the White, or younger, branch of the Yajus, was published by that scholar, together with *Mahidhara's* commentary, in 1852. This edition was followed, in 1855, by the *Satapatha-Brāhmaṇa*, and, in 1859, by the *Śrauta-Sūtra* of Kātyāyana; both accompanied with extracts from commentaries. These works, as the one noticed above, were published under the auspices of the Court of Directors of the East India Company. As to the editor of Sāyana we are indebted for an edition and translation of the *Rikprātiśākhya*, so Professor Weber has supplied us, in the fourth volume of his *Indische Studien* (1858) with the text and translation of the *Prātiśākhya* of the Vājasaneyins. The same scholar has now completed an edition, in the Roman character, of the *Sanhitā* of the Black, or ancient, branch of the Yajus, occupying two consecutive volumes, the eleventh and twelfth, of his valuable series. Naturally much less interest attaches to the text books of the Yajus, being composed of sacrificial formulas and of verses taken for the most part from the *Rig-Veda-Saṁhitā*, than may justly be claimed by the latter collection. Still, Professor Weber has done a good service to Sanskrit scholars in publishing the *Sanhitā* of the only Veda of which a complete edition did not hitherto exist. The *Taittirīya-Veda* has been studied extensively in Southern India, where, as Mr. Burnell informs us, the younger branch of the Yajus is all but unknown. An edition of this *Sanhitā*, together with Sāyana's comment, was commenced as far back as 1854 by the late Dr. E. Röer, in the *Bibliotheca Indica*. Though this is actively carried on at present by the Calcutta pandits, only about one-half of the work has been published, and it will probably take many years longer before it is completed. For this reason Professor Weber, in his edition, has added some extracts from the commentary on particularly interesting passages of the later portion of the text. He has also been able, for the first time in the publication of a *Sanhitā*, to refer throughout to its corresponding *Prātiśākhya-sūtra*, viz. to the *Taittirīya-prātiśākhya*, published by Professor Whitney, of Newhaven. The present edition contains besides a *résumé* of the ritualistic employment of the several sections, according to the *Kāṇḍānukrama*, the text of which is also given; and an alphabetical index of the beginnings of the *rich*, or verses, and the sections, or *anuvākas*, not of the *Sanhitā* only, but also of the *Taittirīya-Brāhmaṇa* and *Āraṇyaka*; additions which will greatly facilitate reference to these texts.

J. EGGEING.

THE LATE MR. EDWIN NORRIS.

THE death of Mr. EDWIN NORRIS, on the 10th of last month, leaves a gap in the small band of English Orientalists, which, we fear, it will not be easy to supply. He was born October 24, 1795, and in his youth spent several years abroad in the capacity of a private tutor. His first appointment was a clerkship in the India House; he afterwards became one of the interpreters to the Foreign Office, and his services in this capacity were acknowledged by a small pension, which enabled him to devote the last ten years of his life entirely to his

favourite studies. The post however with which his name more readily associates itself is the secretaryship of the Asiatic Society, which he occupied for more than twenty-five years, and which was the real turning-point of his career. The duties attaching to his office, especially the editorship of the society's journal, and the constant opportunities afforded him for associating and corresponding with the best Oriental scholars and antiquarians of the day, English and foreign, coupled with a natural taste for philological research, went far to efface the traces of a want of early philological training, and to impart to his mind that breadth of information which soon became so well appreciated by the many students who consulted him. But the time soon came when the critical sagacity and patient industry of Mr. Norris were put to a more serious test. In 1845, impressions, very faint and indistinct, on pieces of cotton cloth, taken by Mr. Masson from the rock inscription of king Asoka, near Kapur di Giri, were placed at the disposal of the society, and Mr. Norris at once undertook the difficult task of deciphering this curious document, and producing a correct representation of it on a reduced scale for publication in the society's journal. The masterly and thoroughly satisfactory manner in which he accomplished this task fully deserved the terms of admiration freely bestowed upon it by scholars like Professor Wilson, then director of the Asiatic Society. The following year, however, was destined to turn Mr. Norris' energies into a new channel of research, too attractive to be ever again abandoned. The immediate occasion was Major, now Sir Henry, Rawlinson's copy and analysis of the great cuneiform record of Darius Hystaspes at Behistun in Persia. It fell to Mr. Norris' lot to carry this important memoir through the press; and so thoroughly did he penetrate, by unwearied exertion, the mysteries of the newly disclosed dialect that not only did he render essential service to the early publications of Sir Henry Rawlinson (whose official employment at Baghdad prevented their being revised by himself, thus saving them from being ushered into the world in a comparatively imperfect state), but Oriental scholars soon learned to look upon him as one of the chief authorities in cuneiform philology. Besides several papers on these subjects contributed by Mr. Norris to the *Journal of the Asiatic Society*, the most important of which is his "Memoir on the Scythic Version of the Behistun Inscription" (vol. xv. 1855), he assisted Sir Henry Rawlinson in publishing for the British Museum two volumes of cuneiform inscriptions, thereby furnishing ample materials for more extended cuneiform researches (1861-66). The chief result, however, of these studies, and the work which, though incomplete and however modestly put forth, marks an epoch in cuneiform studies, is Mr. Norris' *Assyrian Dictionary*. Three volumes of this work were published in 1868, 1870, and 1872 respectively, comprising the letters Aleph to Nun. Much of the contents of these volumes may no doubt become antiquated, and many of the tentative meanings assigned to words may be rejected hereafter; still they will always be acknowledged to contain a great amount of useful and trustworthy information, showing on every page the vast extent of Mr. Norris' reading; while those who use his work cannot but admire the singular candour and modesty with which he places before his fellow students the results of his enquiries. The works hitherto mentioned, whilst they are the principal, are by no means the sole, fruits of Mr. Norris' philological labours. For some time he paid considerable attention to the Celtic dialects, and in 1859 published in two volumes the text and translation of three Cornish dramas, constituting by far the greater portion of the existing relics of Cornish literature. Of other publications may be mentioned, *A Specimen of the Vai Language of West Africa* (1851); *A Grammar of the Bornu or Kanuri Language* (1853); and *Dialogues and a Small Portion of the New Testament in the English, Arabic, Hausa, and Bornu Languages* (1853). A disposition naturally modest and retiring impeded the recognition of Mr. Norris' merits in the great world (his only honours were a foreign membership of the German Oriental Society, and a Bonn honorary degree of Doctor of Philosophy); but none who had the happiness of his acquaintance, or who have carefully studied any of his works, will withhold their tribute to such a rare union of excellences.

Intelligence.

The cuneiform inscription referred to in *Academy* of December 1 (vol. iii. p. 460), as containing, in Mr. G. Smith's opinion, the Babylonian version of the story of the Deluge, turns out to be an Assyrian translation of an Accadian or proto-Chaldaean text deposited at Warka (Erech). There can therefore be no doubt of the extreme antiquity of the narrative. The Assyrian text is evidently encumbered with numerous glosses, and the reading of the proper names is doubtful. Sir H. Rawlinson (*Athenaeum*, December 8) conjectures that the twelve tablets, of which that describing the Deluge was one, embodied a series of myths connected with the signs of the zodiac. The eleventh Babylonian month was dedicated to the god of rain and tempests, and answers in the zodiac to Aquarius. Hence the myth on the eleventh tablet embodies the story of the Deluge. It is much to be desired that Mr. G. Smith's discovery may be verified as soon as possible by other Assyriologists.

M. Lenormant read a paper lately before the Académie des Inscriptions on the sources of our knowledge of the Accadian language, of which he proposes to write the grammar.

A German translation of Luzzatto's grammar of the Biblical Chaldean and the idiom of the Babylonian Talmud has been brought out by Dr. Krüger. The few notes added by the translator are of no great importance, and might have been improved by reference to modern Syriac. Thus נְדָרָא for נְדָרָא (p. 71) may be illustrated from Nöldeke, *Gr. der Neuassyrischen Sprache*, p. 77. That the pronoun נְדָרָא is probably compounded of נְדָרָא, which Dr. Krüger styles an incidental remark ("eine beiläufig gemachte Bemerkung") of Luzzatto's, is considered by Nöldeke (*op. cit.* p. 83) to be the only possible derivation.

Dr. Chwolson's recent tract, *Die Semitischen Völker*, has called forth some interesting critical remarks from Dr. Nöldeke in *Im Neuen Reich* for December. Dr. Chwolson, who so worthily sustains the character of Jewish scholarship in distant Russia, seems to have been carried too far in an opposite direction to Renan. Nations are not inert, immovable masses, but organisms susceptible of development and assimilation. Hence the characteristics of European Jews must not be set down to the credit of the race. The typical Semitic religion is not that of the Old Testament, especially when the latter is idealised, as it is by Chwolson, but Islam. The Indo-European races are not less productive in the field of religion than the Semitic, but inferior in moral energy. Chwolson denies the Semites an ascetic tendency, but he forgets the Nazarene vow, Essenianism, and the frantic asceticism of the Syriac Semites from the fourth to the seventh century. In politics, the Semites are—certainly not democrats, as Chwolson represents—but keen aristocrats; in warfare, incapable of sustained combination, except under extraordinary impulses; in science and art, too exclusively attentive to details.

Prof. Wright, of Cambridge, has edited the text of the three recently discovered leaves of the Curetarian Gospels from Prof. Roediger's edition, and from a copy of the manuscript made by himself. One hundred copies have been printed for private circulation.

The first fasciculus (Genesis) of Dr. Petermann's Samaritan Pentateuch has appeared. The only information as to the critical apparatus is contained on the title-page, from which we learn that the text and variant readings are drawn from MSS. collated by the editor at Nablous. The many interesting questions that suggest themselves—as to the date and comparative value of the MSS., and indeed as to those of the Samaritan text itself—will no doubt be answered in the preface. Dr. Petermann also notices where the editions read otherwise than his MSS. It is to be regretted that he did not act in concert with Dr. Heidenheim, who, as he informs us, has collated the printed Targum with the Roman MSS.

Contents of the Journals.

Journal of Philology, No. 8.—Professor Grote (the late): On Glossology. [Continued from previous number.]—B. H. Kennedy: *Vindictae Sophocleae*. [A series of somewhat petulant criticisms on Campbell's *Sophocles*.]—F. D. Morice: Two passages in Aeschylus and a note of Lobeck. [On *ποσειδών* and *στυγνός* in *Ag.* 294 and *Prom.* 592.]—L. Bywater: Critical Notes on Clement of Alexandria.—The Same: On a passage in Aristotle's *Ethics*.—A. A. Vansittart: Fragments of an old Latin Apocalypse. [Gives the legible portion of the version of the Apocalypse in the Paris MS. noticed in No. 4 of the *Journal*.]—C. J. Monro: Latin Metres in English, after Sidney, Tennyson, and Mr. Ellis. [Chiefly strictures on Ellis' translation of Catullus.]—H. A. J. Munro: Catullus' Fourth Poem. [An elaborate commentary on the scene of the poem: a note appended proposes to transpose lines 7 and 8 in the Second Poem and read, "credo ut, cum gravis acquiescet ardor, sit solaciolum sui doloris."—The Same: Lucretiana. [Points out cases of hiatus in the traditional text of Lucretius, and gives a new explanation of iv. 42–53; concludes with remarks on transposition as a means of emending the text of Lucretius.]—R. Ellis: On the Fragments of Sophocles and Euripides. [Emends a number of these, and adds some fragments not hitherto included in collections.]—H. Nettleship: On the etymology of *consul*, *exsul*, *insula*, and *praesul*. [Connects the three first with the root found in the Gothic *sal-jan* and the German *Saal*.]—W. Selwyn: Emendations of certain passages of *Eusebii Eclogae Propheticae*.—F. A. Paley: Verse Epitaphs on Roman monuments. [Observations critical and explanatory on seven epitaphs in Brambach's *Corp. Inscript. Rhenan.*]—H. Sidgwick: The Sophists. [An extremely able vindication of Grote's view, in answer to recent objections.]—H. Richards: Note on Herod. v. 28. [Acutely suggests *ἀνὰ τὸν αἶνός* for *ἀνέως*.]—H. Jackson: On some passages of the *Nicomachean Ethics*. [Chiefly on v. 5: a new and most satisfactory interpretation of this difficult place.]—E. B. Cowell and J. E. B. Mayor: Fragments of Greek Comedy. [The former points out two fragments in Origen, *C. Cels.*; the latter one in the *Paroemiographi*, *Apostol.* vii. 20, where *μετακλίνων* is to be restored.]

Rheinisches Museum, vol. xxvii. part 4.—L. Breitenbach: Xenophon's *Hellenica*, book i., compared with Diodorus and Plutarch. [Maintains the integrity and historical importance of the book in its existing form.]—J. Gildemeister and E. Bücheler: The pseudo-Plutarch *περὶ ἀσκήσεως*. [A German translation, with commentary, of the Syriac text in Lagarde's *Analecta*.]—H. Nissen: The History of Livy. [Suggests an entirely new mode of dividing the work, in place of the common one into decades.]—A. Rapp: The Maenads in the Greek cultus, in Art and Poetry.—C. Wachsmuth: Locrian Inscriptions.—W. Schmitz: On the Tironian Notes.—L. Jeep: On the MSS. of Claudian's *Raptus Proserpinae*.—A. Riese: On the *Historia Apollonii regis Tyri*. [A reply to Teuffel's theory as to the relative value of the MSS.]—B. Schmidt: The *Drymiacae*.—J. Steup: On Thucyd. iii. 17. [A defence of his view that the chapter is an interpolation.]

The China Review, ed. by N. B. Dennys. Vol. i. No. 1, Hong-kong, July and August, 1872.—Introduction.—The She-king. [Review (excellent and highly favourable) of Dr. J. Legge's edition and translation of that work in his *Chinese Classics*, vol. iv. pt. i., by E. J. Eitel.]—The Adventures of a Chinese Giant. [Account of the adventures of Lo Tat, translated from a Chinese work of fiction entitled *Shuen Hu Chuen*, by H. S.]—A Chinese Farce. [Translation, by A. Lister, of the groundwork of a farce performed at the Tung Hing Theatre, on Nov. 12, 1869, before the Duke of Edinburgh.]—Su Tung-Po. [Account of that statesman and man of letters, who was banished to Canton about A.D. 1066; being a chapter from an unpublished history of the Kwangtung Province, by E. C. Bowra.]—Mr. Wade on China. [Translation, by H. E. Wodehouse, of an official memorial on the position of affairs in China, addressed to the Chinese Ministers of State, by Mr. Wade, at the request of Sir Rutherford Alcock.]—From Gotham to Cathay. [Account of a journey from New York (Gotham) across the "Great West" to China.]—Rhymes from the Chinese. [Poem "To a Successful Friend," translated from To Pô, by J. Chalmers.]—The name "Hongkong." [The name is explained as meaning "pleasant port," instead of "fragrant streams."]—China's Place in Philology. [Review, rather unfavourable and severe, of J. Edkins' work, by T. Watters.] Short notices of new publications and literary intelligence.—Notes and queries.

New Publications.

BEZENBERGER, A. Untersuchungen über die gotischen Adverbien u. Partikeln. Halle: Buchhandlung des Waisenhauses.
GRASSMANN, H. Wörterbuch zum Rig-Veda. 1. Lieferung. Leipzig: Brockhaus.
HERMAE PASTOR. Veterem latinam interpretationem e codd. ed. A. Hilgenfeld.
HYGINI FABULAE. Ed. M. Schmidt. Jena: Manke.
ISAAC, Saint, of Antioch. Opera omnia cum varia lectione syriacae arabiceque primus ed., latine vertit, prolegomenis et glossario auxit G. Bickell. Pars I. Giessen: Ricker.
LANGE, L. Der homerische Gebrauch der Partikel *ei*. 1. Einleitung: Ueber *ei* mit dem Optativ. Leipzig: Hirzel.
STAHL, J. M. Quaestiones Grammaticae ad Thucydidem pertinentes. Bonn: Weber.

ERRATUM IN No. 62.

Page 471, col. 2, line 13, for "language" read "layman."

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